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HYDROLOGIC BULLETIN NO. 1

NOVEMBER 1941

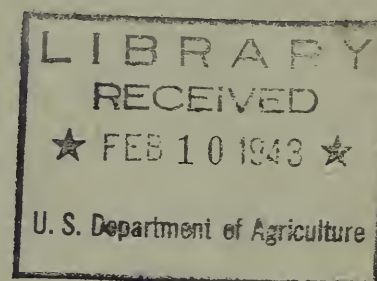
HYDROLOGIC DATA

NORTH APPALACHIAN EXPERIMENTAL WATERSHED
COSHOCOTON, OHIO

1939

BY

HYDROLOGIC DIVISION
OFFICE OF RESEARCH
SOIL CONSERVATION SERVICE



UNITED STATES DEPARTMENT OF AGRICULTURE

WASHINGTON, D. C.

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UNITED STATES GOVERNMENT PRINTING OFFICE
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HYDROLOGIC DATA: NORTH APPALACHIAN EXPERIMENTAL WATERSHED, COSHOCTON, OHIO, 1939

By Hydrologic Division, Office of Research, Soil Conservation Service

INTRODUCTION

This publication is the first of a series of annual bulletins presenting basic hydrologic data collected at the North Appalachian Experimental watershed near Coshocton, Ohio. This project is one of several similar projects in the United States at which the hydrologic and agricultural problems within the field of the Soil Conservation Service are being studied. Later publications, presenting analyzed data and the results of several studies, will follow in this series.

The hydrologic data presented in this bulletin are being collected primarily to determine the effect of agricultural land use practices on the conservation of soil and water and on floods. These data are also needed for economically designing the erosion, flood-control, and hydraulic structures used in the general soil- and water-conservation program. Available data for these uses are extremely meager. Without such data it is impossible to make accurate estimates of the magnitude of the run-off which must be handled by the

channels, spillways, check dams, culverts, stock ponds, and other hydraulic works in water facilities and soil- and water-conservation operations. The lack of dependable information on run-off often results in the complete failure of such works. Even more frequently perhaps, insufficient information leads to the use of unnecessarily high factors of safety in the design of structures and thus to unjustifiably high costs. These data will be useful not only to agencies of the Department of Agriculture but also to many other Federal agencies, States, municipalities, private companies, and individuals in planning works and structures that depend for their safety and economy on a knowledge of run-off rates and amounts for which provision must be made.

In connection with this work, run-off measuring stations with attendant rain gages were established on areas ranging in size from 0.02-acre lysimeter plots to natural watersheds of 4,580 acres. The watersheds for

ACKNOWLEDGMENTS.—The work on this experimental watershed project was done in cooperation with the Ohio Agricultural Experiment Station, Edmund Secrest, director, and Robert M. Salter, associate director and chief, Department of Agronomy; and with the Muskingum Watershed Conservancy District, Bryce C. Browning, executive secretary. Valuable assistance was rendered by various technicians of the College of Agriculture and the College of Engineering of Ohio State University, the United States Geological Survey, and the Office of Technical Operations of the Soil Conservation Service. Robert E. Yoder, cooperative agent employed jointly by the Ohio Agricultural Experiment Station and the Soil Conservation Service, has been responsible for conduct of cooperative relations with all State agencies and has devoted much of his time to technical problems on the project.

The data in this bulletin were collected by the project staff of the North Appalachian Experimental Watershed Project under the direction of W. D. Ellison, project supervisor, and assembled for publication by H. S. Riesbol, hydraulic engineer in charge of hydrologic investigations, assisted by Leonard Schiff, B. X. Landrine, A. C. Worrell, M. V. Baker, F. R. Dreibelbis, W. H. Pomerene, F. A. Post, Dan E. Hall, L. A. Boz, Victor Mockus, Robert Youker, Tollie Sailors, and others. Assistance in collecting the records was also given by John Horton, George L. Sherman, Chester Woo, and James M. Czel, who were employed at this project. General direction for the collection and preparation of the data originated from H. R. Leach, H. L. Cook, and L. L. Harrold of the Washington office, Hydrologic Division, C. E. Ramser, chief.

which basic records are included in this bulletin are listed below:

Mixed cover watershed:		Single crop watershed—	
	<i>Acres</i>	Con.	<i>Acres</i>
91.....	293	106.....	1. 56
92.....	920	107.....	2. 59
93.....	1, 078	109.....	1. 69
94.....	1, 517	110.....	1. 27
95.....	2, 569	111.....	1. 18
97.....	4, 581	113.....	1. 45
5.....	349	115.....	1. 61
10.....	122	121.....	1. 42
11.....	292	123.....	1. 37
13.....	439	124.....	2. 07
20.....	373	128.....	2. 21
172.....	43. 6	129.....	2. 47
183.....	74. 2	130.....	1. 63
196.....	303	131.....	2. 21
Single crop watershed:		134.....	. 916
102.....	1. 25	135.....	2. 69
103.....	. 650	188.....	2. 06
104.....	1. 33	191.....	1. 08

DESCRIPTION OF THE PROJECT

An area known locally as Little Mill Creek watershed, about 10 miles north of Coshocton, Ohio, in the Muskingum River Basin, was selected for the hydrologic studies. The area is typical of the general farming area of the North Appalachian physiographic province that comprises eastern Ohio, western Pennsylvania, northeastern Kentucky, and western West Virginia. The experimental area lies south of the limits of glaciation, at a latitude of 40°22' north, and within an elevation range of 800 to 1,300 feet mean sea level.

In general, the valleys are narrow and have high gradients and steep slopes. Land steeper than 20-percent slope occurs on approximately 30 percent of the area, whereas fairly level land of less than 5-percent slope occurs on only 5 percent of the area. The drainage pattern of nearly all watersheds, regardless of size, is well defined.

The bedrock of the area consists of the sandstones, shales, clays, limestones, and coal and iron ores of the upper Pottsville, the Allegheny, and the lower Conemaugh series of the Pennsylvania system.

The most extensive soil series is the Muskingum, an upland soil developed on sandstone and shale. The surface soil of the Muskingum silt loam is brown to yellowish brown, normally about 6 to 8 inches thick. The subsoil is yellowish brown and contains occasional sandstone and shale fragments, the number usually increasing with depth. Surface and internal drainage

are good. The reaction is normally acid. Muskingum loam is derived largely from sandstone and is coarser in texture throughout the profile than Muskingum silt loam. It is rather shallow and contains numerous sandstone fragments. The unweathered sandstone rock occurs at a depth of 18 to 30 inches. The Muskingum loam is also acid in reaction.

The experimental watershed lies within the humid region. The mean annual temperature at Coshocton for a period of 21 years (1909–39) is 51.07° F., and the mean annual precipitation for the same period is 41.5 inches. During the winter months a large proportion of the precipitation is in the form of snow, the average annual snow depth being about 20 inches. The project lies within a belt of moderately intense rainfall. Rainfall amounting to 1.56 inches within a 10-minute period occurred at Zanesville, Ohio, in July 1936.

About 26 percent of Little Mill Creek watershed is in permanent woodland cover, 24 percent in permanent and semipermanent pastures, and 12 percent in miscellaneous usage such as farmyards, orchards, and idle land. The remaining 38 percent of the watershed is under cultivation, about 23 percent is in rotation meadow and 15 percent in cultivated crops, chiefly corn, wheat, and oats.

PERIOD OF RECORD

The period covered is from January 1 to December 31, 1939. Records from four single-crop watersheds that were in operation during the last 3 months of 1939 and from one 377-acre mixed-cover watershed for the year 1939 are not included.

GENERAL CLIMATE DURING THE PERIOD OF RECORD

The total rainfall for 1939 was about 5 inches below normal. The monthly totals for August, September, November, and December all were deficient, the major deficiencies occurring in September and November. The monthly totals for June, July, and October were excessive. The October rainfall, however, occurred almost entirely in the storm of October 25–27, and the rainfall for the remainder of the month was deficient. This storm occurred when the soil was dry, and many cultivated areas that had recently been tilled in planting winter wheat were seriously eroded. The remaining storms were well distributed and generally of moderate intensity, providing ample moisture for crop growth up to the latter part of August. In most of the streams there was sustained low flow except in September and October.

UNITS AND DEFINITIONS

[All time referred to in this bulletin is eastern standard time]

Drainage area, drainage basin, and watershed.—The area drained by a stream system above a designated point on the stream. In this bulletin these terms are used synonymously.

Shape factor.—Quotient obtained by dividing the area by the square of the length. It represents the ratio of width to length of a watershed.

PRECIPITATION

Amount.—The total rainfall that falls in a given period expressed in inches depth. Snow and hail are expressed in inches depth of their water equivalent.

Intensity or rainfall rate.—The average rate at which the precipitation falls for a given time interval, generally expressed in inches per hour.

HUMIDITY

Relative humidity.—The amount of moisture present in the atmosphere expressed as a percent of the maximum amount of water vapor that the atmosphere could contain without condensation under the same conditions of temperature and pressure.

RUN-OFF

In this bulletin, rates of flow are expressed as discharge in second-feet (cubic feet per second) or run-off in inches per hour. Amounts of run-off are given in inches depth on the drainage area.

Second-feet.—The volume of water in cubic feet that

passes a given section of a stream in 1 second. Second-feet and cubic feet per second are synonymous.

Inches per hour.—The depth in inches to which the amount of water passing a given section of a stream in a given time interval would cover the drainage area above that section if the water flowed at the same average rate for 1 hour.

Run-off in inches.—The depth in inches to which the drainage area would be covered if the amount of water flowing from it in a given period were uniformly distributed on its surface.

LAND USE

Meadow.—Land from which hay is obtained.

Pasture.—Grassland used for grazing.

Stooling.—The stage of development in plants of the grass family during which additional shoots are extended from the crown at the base of the stem.

Flowering.—The stage of plant development at which 50 percent or more of the plants are in flower.

Seed stage.—The stage of plant development at which the seed is fully developed.

Soft dough.—The stage of seed development in small grains at which the seed has attained its full size but is still soft and pasty.

Hard dough.—The stage of seed development in small grains during which the plants are coming into full maturity. The seeds are hardening and the stems and leaves have at least 60 percent of their moisture.

Lodging.—Plants laid flat on the ground by the action of wind and rain.

FARMING PRACTICES

Meadow usually follows wheat in the rotation. The majority of the meadows are clover-timothy. Timothy is usually drilled early in October with the wheat, and red clover, or alsike clover and red clover, is broadcast March 20 to April 15 on the wheat ground already seeded to timothy. Alfalfa is sometimes sown in a seed mixture with clover or sown alone in wheat in the spring. Hay is cut the year after sowing clover. Clover-timothy, or clover-timothy-alfalfa meadows are usually cut once each year, June 20 to July 1. Pure alfalfa meadows are cut three times a year, May 25 to June 7, July 1 to 15, and August 20 to September 7.

Winter wheat is commonly grown in this area. It usually follows oats or corn in the rotation but occasionally may follow meadow or semipermanent pasture. Wheat is usually drilled at the rate of 1½ to 1¾ bushels

per acre on plowed or disked fields. Oats stubble is plowed for wheat during August and early September. Wheat is planted October 1 to 7. It is harvested with a binder June 24 to July 4. The shocks are left in the field or stored in barns until July 20 to July 31, when they are threshed. The straw piles are usually made within 50 feet of the cattle barn and not in the fields.

Oats usually follow corn. Fields are usually plowed during March or April. The seed grain is drilled at the rate of 2 to 3 bushels per acre during April or early May. Oats are harvested with a binder July 15 to 30. The shocks are either hauled into barns or left in the field until August 10 to 20, when they are threshed.

Soybeans are occasionally grown. The soil is prepared by plowing May 5 to 15. The field is then disked once and crossed twice with a spike-toothed harrow.

The beans are sown with a disk drill at the rate of 2 to 2½ bushels per acre May 15 to 31. The drill rows are approximately 7 inches apart. The crop is harvested by cutting with a mowing machine August 10 to August 25. The bean hay is left to cure in the swath 3 to 10 days and then raked and placed in haystacks in the field for 2 to 5 days. It is then hauled from the field.

Corn usually follows second-year meadow in the rotation. Plowing is done March 10 to May 15. Following the plowing operation most fields are disked once with a two-horse disk and crossed twice with a spike-toothed harrow. The corn is drilled either with a two-row corn planter at the rate of 8 to 10 pounds per acre, set at approximately 42 inches by 12 inches, or drilled with a two-row hill drop planter set at approximately 42 by 32 inches with two to three grains per hill. The corn is cultivated two to four times, June 7 to July 5, with a two-horse six-shovel walking cultivator equipped with square shank shovels. Corn is usually cut and shocked for fodder September 7 to 30. The ears are husked from the field shocks October 7 to November 15. Most of the fodder is left in the field to be hauled out as needed during the winter.

Early potatoes are commonly grown in fields of less than 1 acre. The usual land preparation is deep plowing, 7 to 10 inches, March 15 to April 15, disking twice and crossing twice with a spike-toothed harrow. Early potatoes are planted in hills or drills April 1 to May 1 and cultivated with a spike-tooth harrow once, April 15 to May 15, and with a six-shovel walking cultivator two to four times, May 25 to June 20. Small ridge cultivation is common. Harvesting is done during the month of August by hand digging with a fork or by a horse-drawn digger. The land is then left bare or disked and seeded to rye or wheat.

Late potatoes are usually planted May 20 to June 15, cultivated June 15 to July 15, and harvested October 1 to 15.

Pastures, for practical purposes, can be divided into groups, permanent and semipermanent. Permanent pasture is located on 20- to 30-percent slopes and is not cultivated. Most semipermanent pasture is located on 15- to 25-percent slopes or on poorly drained bottom land. It is usually cropped 3 out of 10 years, in a rotation of wheat 1 year, meadow 2 years, and pasture 4 to 7 years. It is usually fall-plowed August 1 to September 10 before being sown to wheat.

INSTRUMENTATION AND METHODOLOGY

PRECIPITATION

At the end of December 1939 there were 45 rainfall stations recording rainfall intensities and amounts and 66 additional stations where records of daily rainfall amounts were being maintained. The location of these rainfall stations is shown on figures 1 and 2.

MEASURING DEVICES

Rainfall amount is measured in Weather Bureau 8-inch standard rain gages that are exposed in accordance with specifications of the Hydrologic Division. Each gage is mounted on a concrete pedestal in the center of a woven-wire enclosure 8-feet square. The standard gages are read once daily at 8 a. m. by local, paid observers.

Rainfall intensity is measured in Fergusson weighing and recording rain and snow gages of 9-inch capacity operating on chart scales of 1 inch equals approximately 30 minutes and of 1 inch equals a ¾-inch depth of rainfall. At most of the recording gages there is, in addition, a standard gage that can be used to check the total amount of rain caught by the recording gage. All recording rain gages are serviced by the project personnel. A typical rainfall measuring station is shown in plate 1, C.

Snowfall is measured directly in the Fergusson weighing and recording rain and snow gages. In the nonrecording rain and snow gages the snow catch is melted to determine water-depth equivalent. Each rainfall and snowfall measuring station is also equipped with a snow board on which the depth of each freshly fallen snow is measured. The snow board consists of a 1-foot-square pine board covered with muslin.

Intensity records from individual gages are computed for each regular clock 5-minute, 10-minute, 15-minute, 30-minute, or 1-hour interval, or multiples thereof, during which rain fell at uniform intensity. In addition the individual intensities are computed for 1-, 2-, 3-, or 4-minute periods when rainfall during the regular intervals was not of uniform intensity.

The computations necessary for the various tables of basic data are described in the explanation of the tables.

ACCURACY OF RECORDS

The exposure of the individual gages ranged from poor to excellent due to the steep and highly dissected topography of the area and to the presence of much woodland and numerous farmsteads. Many of the earlier records were of low accuracy during the period the local observers were being trained. Records of

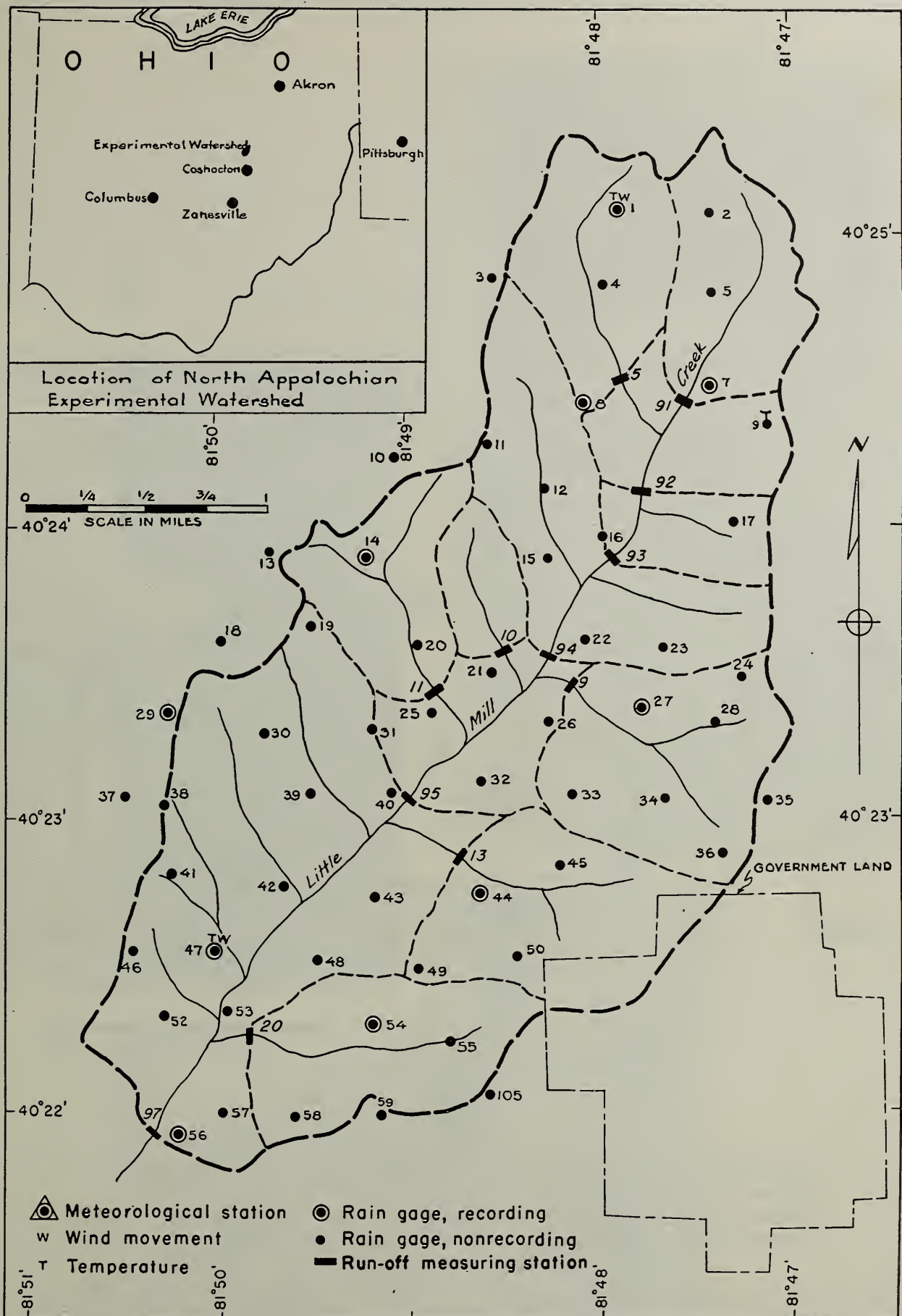


FIGURE 1.—Location of watersheds, rain gages, and run-off measuring stations on Little Mill Creek drainage basin.

North Appalachian Experimental Watershed

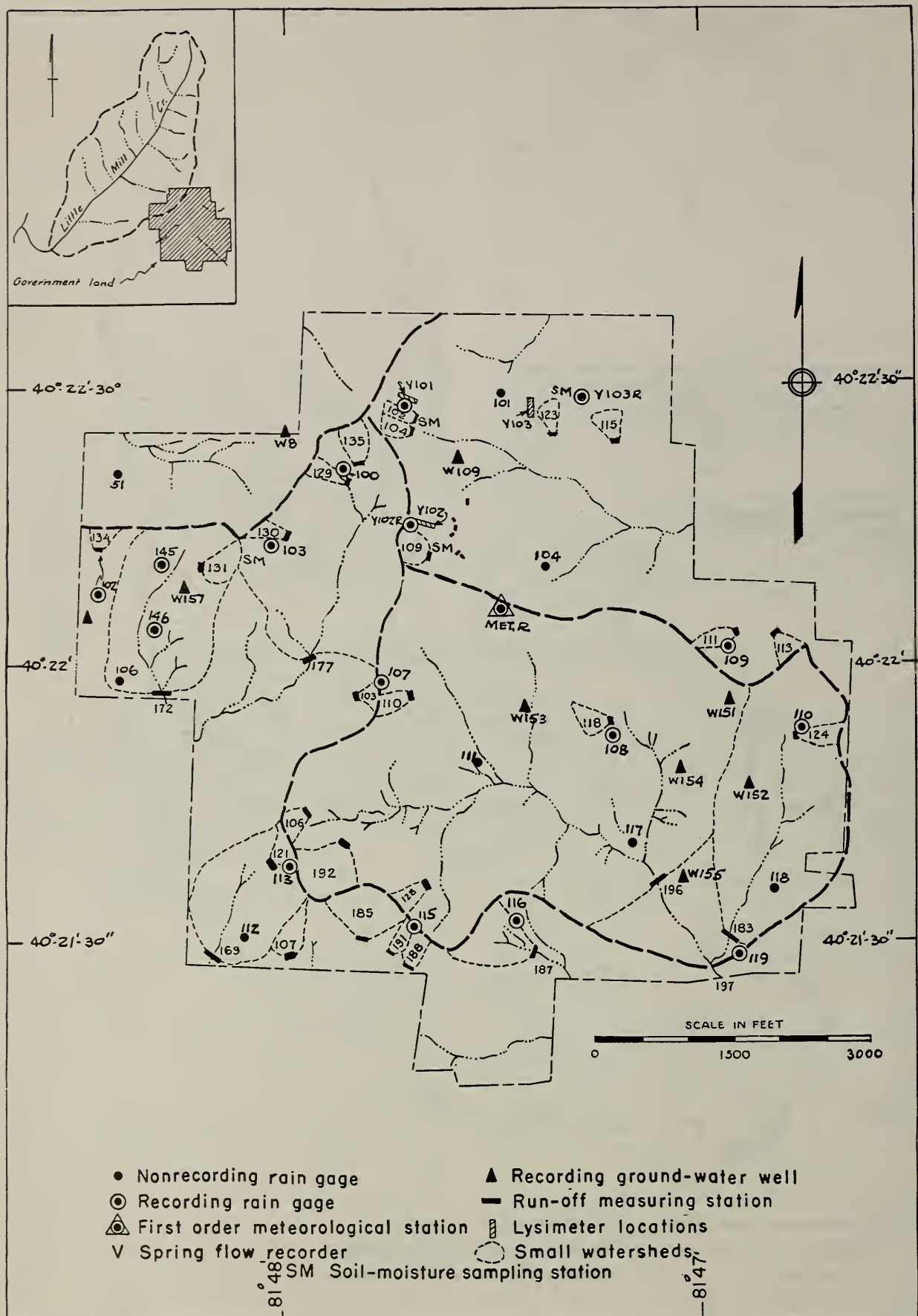
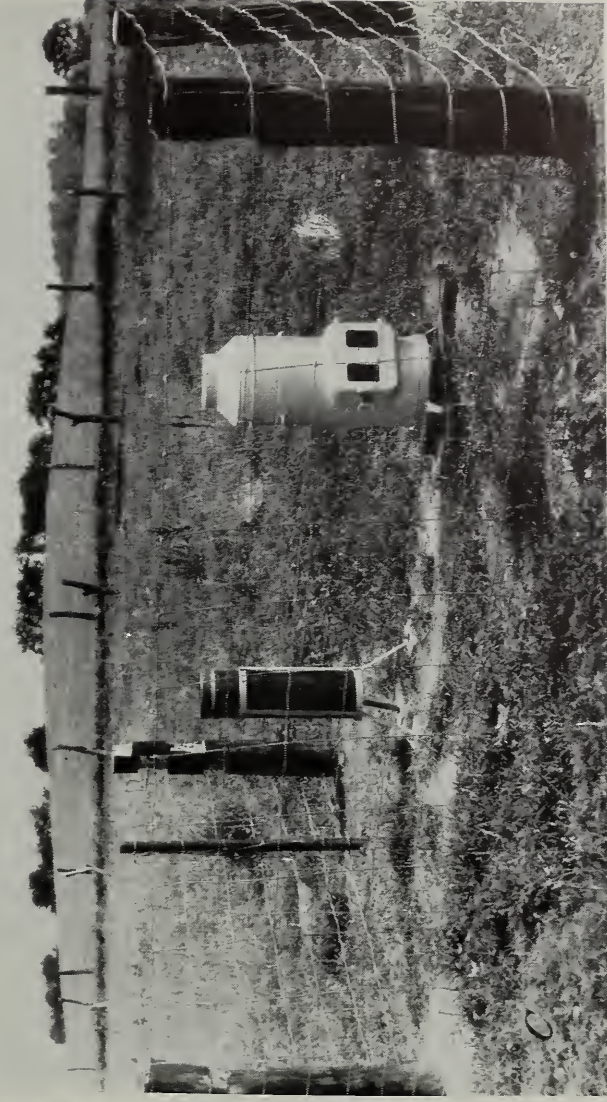
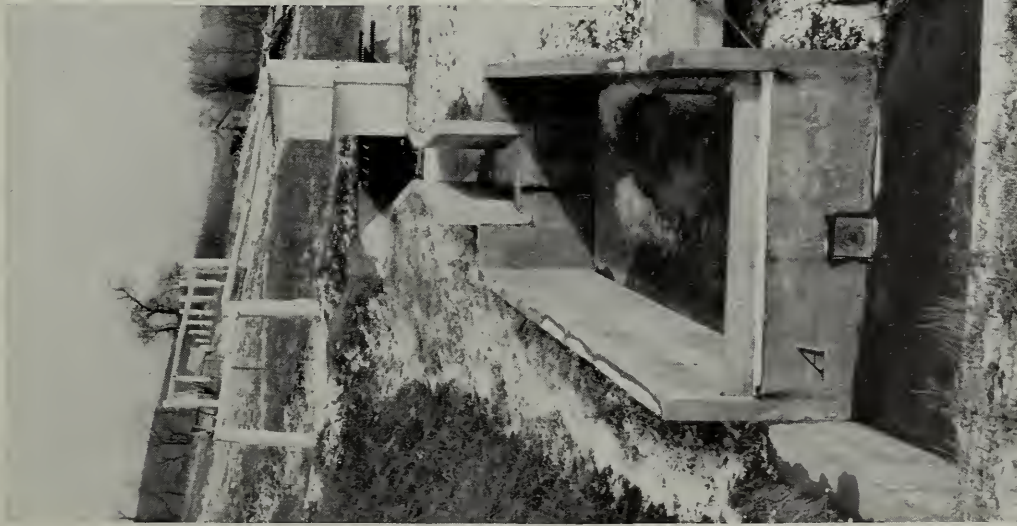
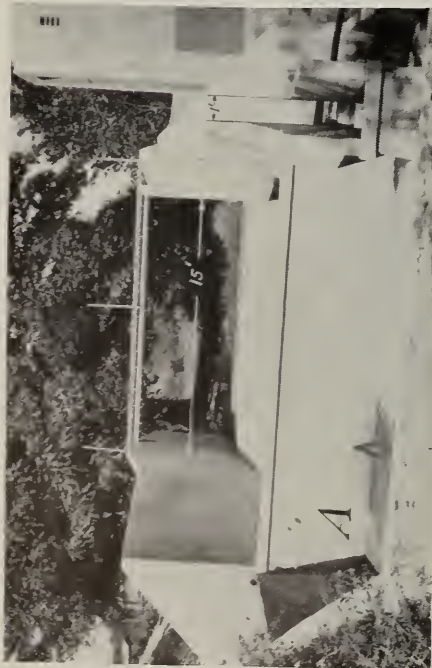


FIGURE 2.—Location of watersheds, instrumentation, and soil-moisture sampling stations on Government land.



A, Parshall measuring flume of 1-foot throat width, approach basin, instrument shelter, silt box, and Ramser silt-sampling device as installed at the outlet of watershed 102; B, H measuring flume for flows up to 30 second-feet; C, a typical rainfall-measuring station which consists of U. S. Weather Bureau type nonrecording rain and snow gage and Fergusson weighing and recording rain and snow gage.



A, Dual Parshall measuring flume of 15-foot throat width with supplemental low-flow flume; B, meter gaging station with Columbus deep-notch weir control; C, ground-water observation well showing concrete cap, instrument shelter, and water-level recorder.

rainfall intensity and depth are considered good for 1939.

RUN-OFF

At the end of December 1939 records of run-off rates and amounts were being maintained for 48 watersheds. The watershed boundaries and the location of the run-off measuring stations are shown in figures 1 and 2.

MEASURING DEVICES

Two kinds of run-off measuring stations are in operation: (1) Those having flow-measuring devices that have been previously calibrated, and (2) those requiring field calibration by means of current-meter measurements of discharge.

There are three types of precalibrated flumes in operation, the H flume, the Parshall measuring flume, and the dual Parshall measuring flume.

The H flume was designed by the Soil Conservation Service to measure rates of flow up to 30 second-feet. It consists of converging vertical side walls cut back on a slope at the outlet so as to give a trapezoidal projection of the outlet (pl. 1, B).

The Parshall measuring flume consists of a converging section, a throat, and a diverging section, the floor of the throat section being inclined. Flumes of 6-inch, 9-inch, and 12-inch throat have been installed on the project. All these flumes are accompanied by silt boxes and Ramser automatic silt sampler and operate entirely under free flow (pl. 1, A).

The dual Parshall measuring flume is a combination flume that consists of a Parshall flume of standard design with a side opening placed flush with the floor of the recovery section. Flows less than the minimum measurable capacity of the main flume pass through this opening into a small supplemental flume, either Parshall or type H, where they are measured. Main flumes of 4-foot, 8-foot, and 15-foot throat have been installed and cover the range of flows from watersheds ranging in size from 10 to 200 acres (pl. 2, A). Two stage recorders are used, one measuring the head on the Parshall flume used for the higher flows, the other on the small supplemental flume.

All of these flumes were calibrated in hydraulic laboratories by the Soil Conservation Service and were constructed in the field with all conditions as nearly identical as possible with those under which they were rated.

For watersheds larger than 200 acres the Columbus-type deep-notch ogee-control weir is used to stabilize the relation between stage and discharge for low flows, and, in most cases, the stabilized channel banks serve as control for medium and high flows. At some of the

stations, where deep flows over the valley floors are expected, a narrow concrete control wall has been extended across the valley floor. A typical current-meter gaging station of this type is shown in plate 2, B. Each of these stations is rated by current-meter measurements made according to the United States Geological Survey standards.

Type FW-1 water-stage recorders operating on chart scales of 1 inch equals 25 minutes and 1 inch equals 0.20 foot-stage are used at all run-off measuring stations.

METHODS OF COMPUTATION

The records of stage are first corrected for improper time and errors in gage height due to ordinary errors such as datum shifts, intake stoppage, paper expansion and contraction, improper settings, and instrument irregularities, all of which, except datum shifts, are noted at each station by routine inspections. Elevations of flumes, weirs, and recorders are checked by levels annually or oftener. The corrected gage heights are transferred from the recorder charts to computation sheets on which are tabulated the time and stage for (1) each clock 5-, 10-, or 15-minute period during rainfall, (2) each change in the direction of the stage graph, (3) each additional point necessary to define the hydrograph and to compute the run-off amounts within allowable limits of error.

Rating tables showing the discharge in second-feet and in inches per hour for all stages are prepared for all stations. These tables are derived either from the laboratory calibrations or from rating tables determined from current-meter measurements. These stage-discharge tables are applied to the tabulated gage heights, and the individual values of discharge for each listed time are tabulated.

The discharge for each tabulated time is averaged with that for the preceding time, and this average discharge for the time interval is converted to run-off amount in inches for the interval. The run-off amounts for each time interval are then accumulated.

ACCURACY OF RECORDS

The records from the small Parshall measuring flumes and the dual Parshall measuring flumes are of a high degree of accuracy. The records from the type H flumes are of high accuracy except as the ratings may be affected by depositions of debris on flume floor and approach. Whenever possible, data are obtained to aid in the application of corrections to records of receding flows affected by debris deposits. Usually under such conditions the period of rise and peak discharge can be determined satisfactorily but the total discharge cannot always be computed. The accuracy

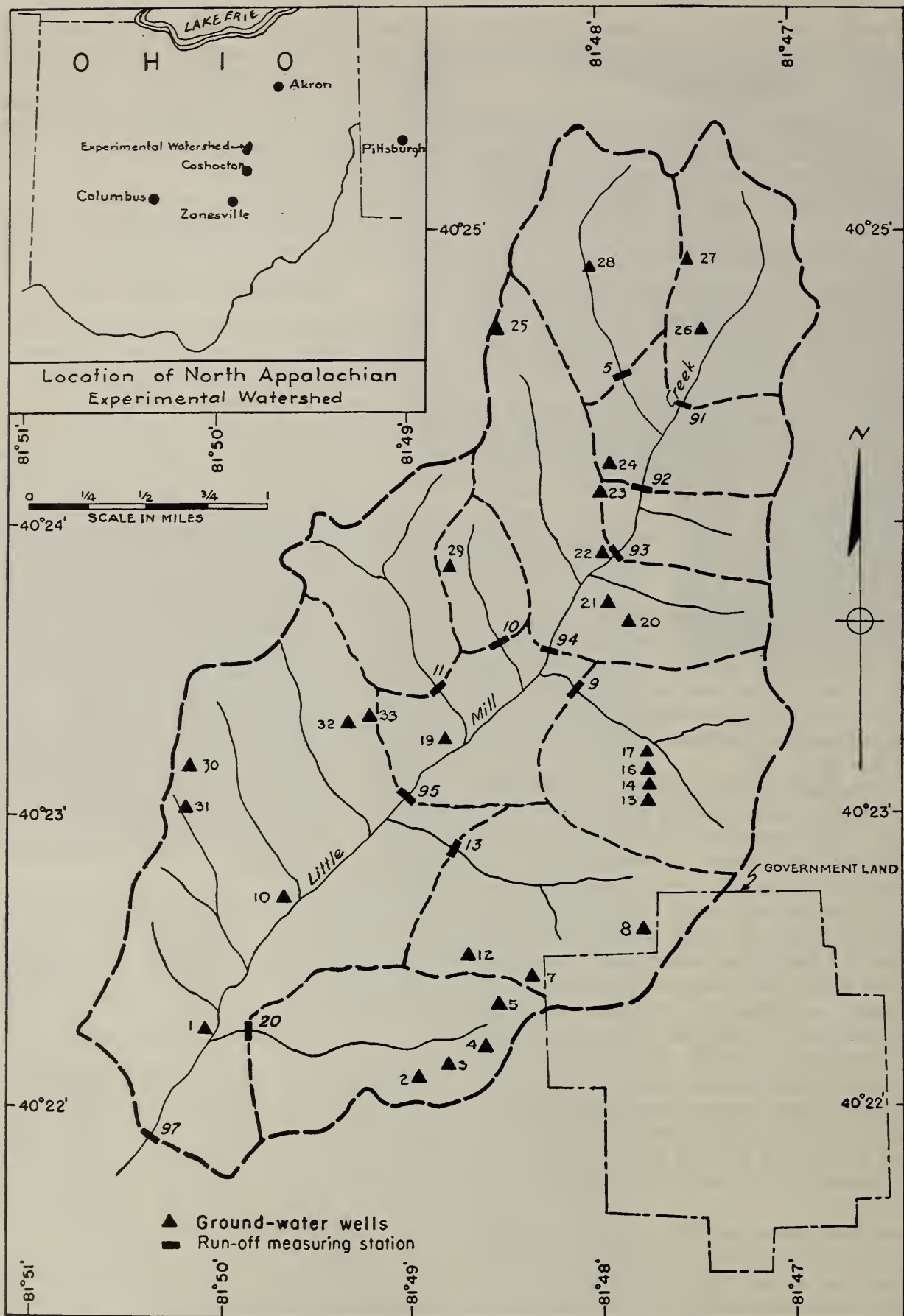
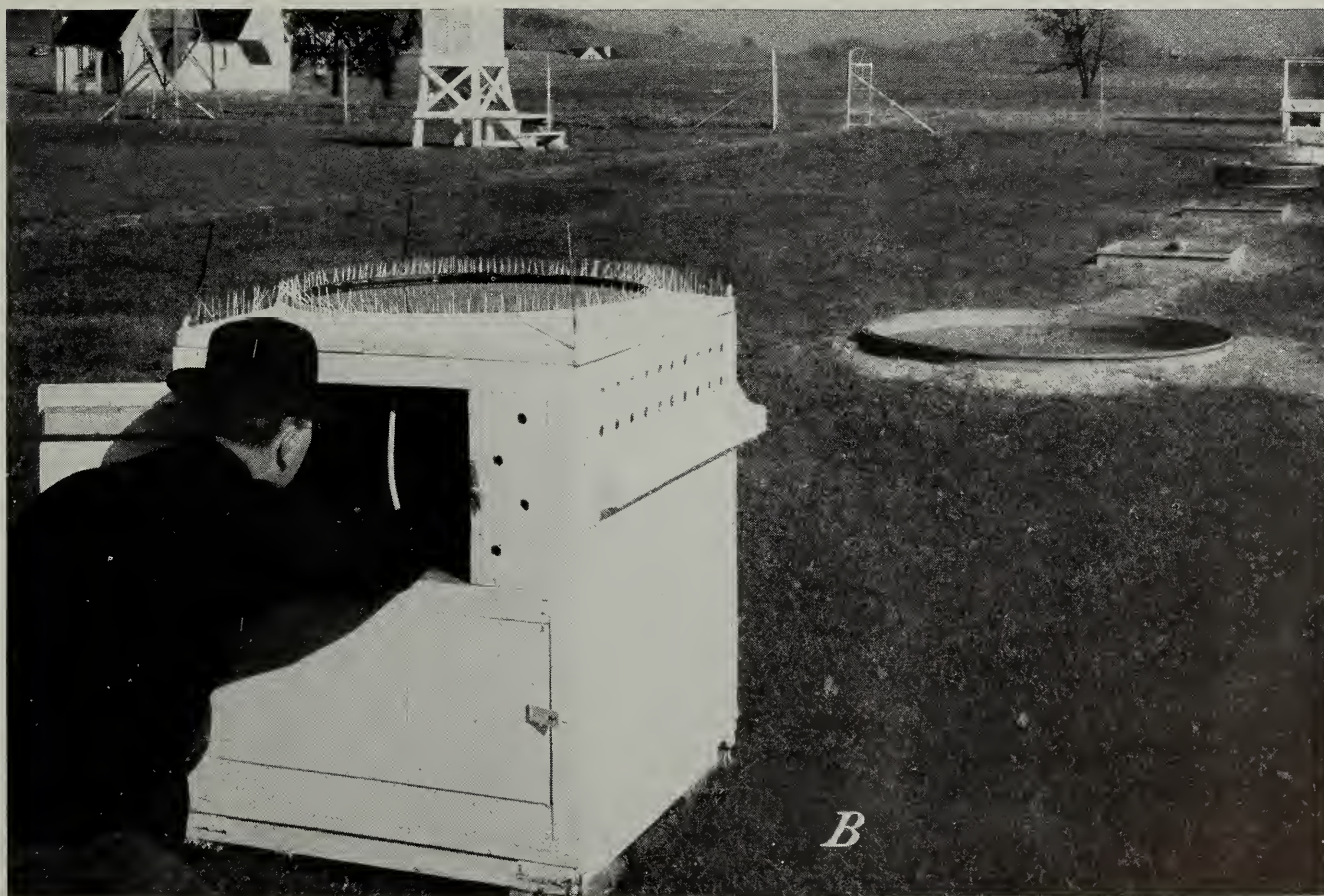


FIGURE 3.—Location of watersheds and ground-water observation wells in Little Mill Creek drainage basin.



A, West side of central meteorological station, showing meteorological instrument shelter and various types of shielded rain gages;
B, east side of central meteorological station showing evaporimeter and evaporation pans.



Surface view of lysimeter battery Y 102 with project office buildings in background.

of records from each station is described in connection with the summary of rainfall-run-off records from that station.

GROUND WATER

Records of ground-water levels in observation wells are obtained by continuous recorders. Figures 2 and 3 show the location of these wells and plate 2, *C*, shows a typical installation.

EROSION

The soil contained in the run-off water that leaves 15 of the single-crop watersheds is measured by silt boxes and Ramser automatic silt samplers (pl. 1, *A*).

SOIL MOISTURE

The soil moisture (percent of dry-soil weight) is measured at single-crop watersheds 102, 104, 109, 123, and 131 by weekly sampling with soil augers or King sampling tubes, depending on the moisture content. Sampling in each watershed is done at permanent sites selected to adequately represent the watershed area. Depth of sampling was changed during the year and may be determined by reference to table 5. The volume weights of the soil are also determined, from which the soil moisture (percent of dry weight) can be computed as a volume.

COVER AND CULTIVATION

A survey of land cover and conditions over the whole project is made semimonthly. Additional inspections are made on all small watersheds after each run-off period. This affords a record of the stage of development of each crop, cultural operations, and the general moisture condition of each type of soil. The dates of important changes in cover and in culture operations that might have bearing on the hydrologic conditions are noted along with the tables of rainfall and run-off summaries.

The maps presented in figures 4 and 5 show the distribution of cover by watersheds on Little Mill Creek drainage basin and on the Government land.

GRAPHIC DATA

The areal distribution of the rainfall for the four greatest storms is shown by isohyetal lines in figures 6-10.

Rainfall and run-off from two watersheds for storm of July 8, 1939, are shown in figures 11 and 12. These hydrographs are typical of those prepared in the analysis of the hydrologic data from all the watersheds

OTHER METEOROLOGICAL RECORDS

Records of temperature, humidity, evaporation, air pressure, wind movement, and sunshine duration are being obtained at the central meteorological station. General views of this station are shown in plate 3. Records of relative humidity and dew point are obtained from wet- and dry-bulb thermometers. Evaporation is measured from the United States Weather Bureau class A pan, the Colorado pan, and the Bureau of Plant Industry pan. Records of barometric pressure are obtained from a recording barograph and a mercurial barometer.

Lysimeters provide hydrologic data that are useful as a check of observed data and in the analysis and interpretation of the watershed data. During 1939 two lysimeter batteries were in operation at the North Appalachian Experimental watershed. Each battery consisted of three blocks of undisturbed soil, parallel to each other and about 6 feet apart, surrounded by concrete walls to prevent transverse movement of water (pl. 4). The blocks have an area of 0.002 acres (6.22 by 14 feet) and a depth of 8 feet, which is well into underlying rock. The upper surface of each soil block is maintained at its natural slope and the lower surface is cut parallel to the upper surface. Equipment is provided for continuously recording the rate and amount of precipitation, surface run-off, and downward percolation that passes through the lower surface of each soil block. One block in each battery is set on scales that record by 10-minute increments the soil-moisture accretions and subtractions to the nearest 0.01 inch.

The two batteries have different cover, slope, and soil. Battery Y101 is in grass (the same as watershed 102) and has a slope of 23.2 percent, and its soil is Muskingum loam; whereas battery Y102 is cultivated (the same as watershed 109) and has a slope of 12.9 percent, and its soil is Muskingum silt loam.

Precipitation, surface run-off, percolation, and weight changes are tabulated for each hour. Only records of the precipitation, run-off, and percolation are presented in this bulletin, however.

in Little Mill Creek drainage basin and on the Government land.

The fluctuation of the water level in wells 2, 10, 12, 16, 21, and 27 is shown in figures 13-15. Each of these is a dug well and is lined with field stone that is laid freely from the bottom to a point 6 feet from the surface and laid in mortar from there to the surface.

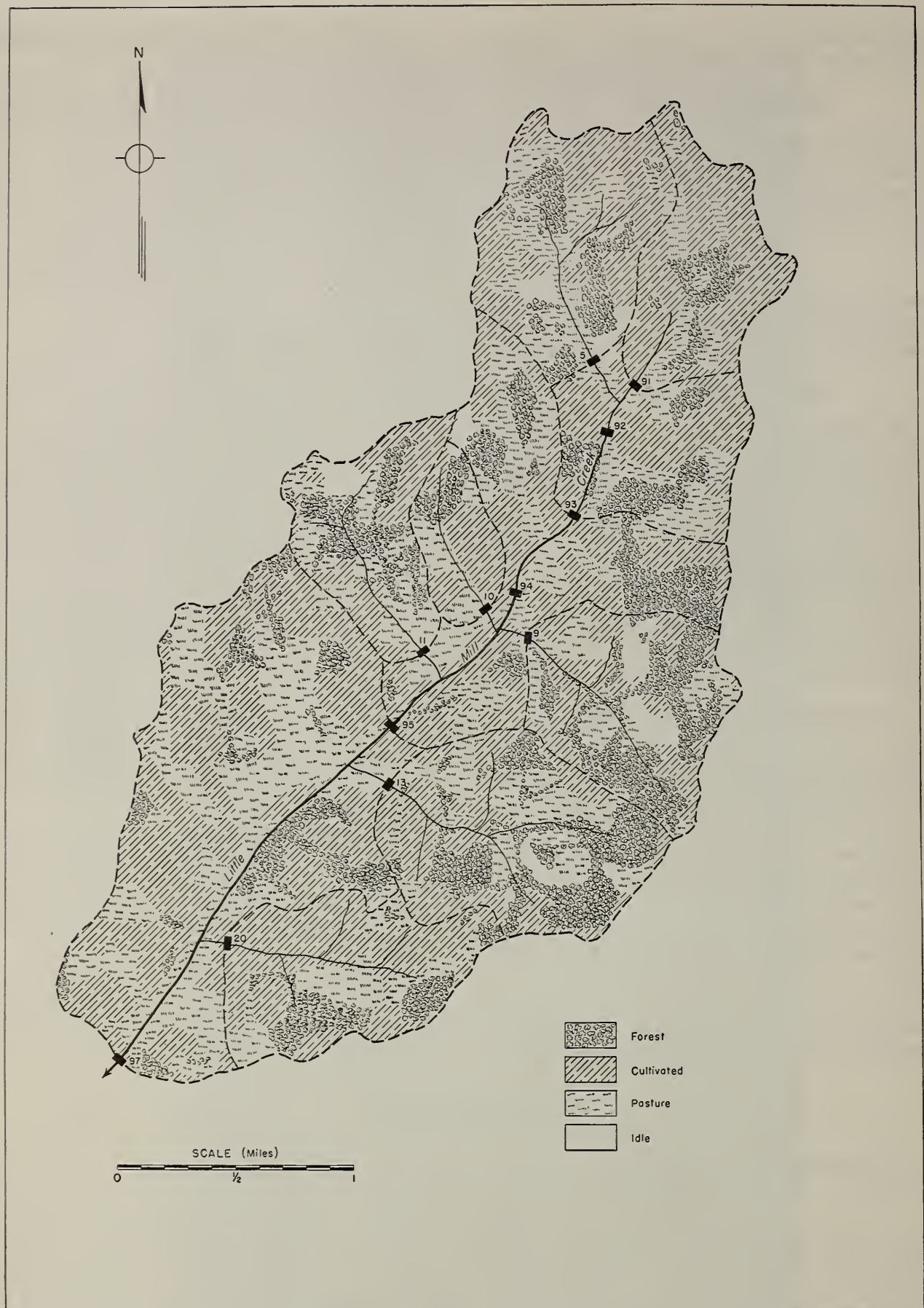


FIGURE 4.—Land use and watersheds in Little Mill Creek drainage basin.

Each well is fitted with a concrete top in which is imbedded a permanent T-bar measuring point, and each well is equipped with a continuous water-level recorder.

The well diameter (inside) is approximately 24 inches. A description of the wells is given in table 123, p. 193.

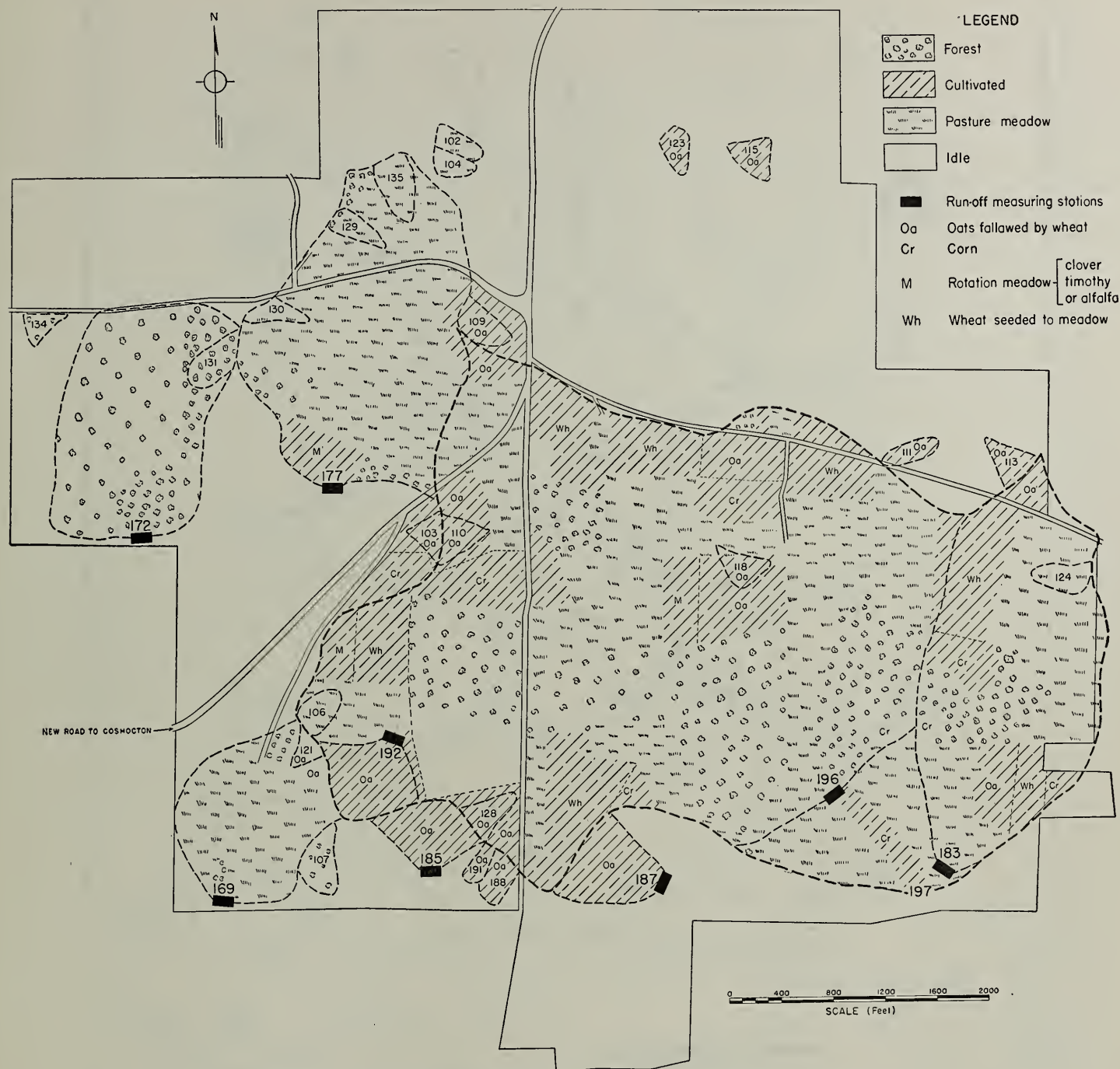


FIGURE 5.—Cultivated areas, crops, and watersheds on Government land.



FIGURE 8.—Isohyetal map of storm of July 8, 1939, Little Mill Creek drainage basin.

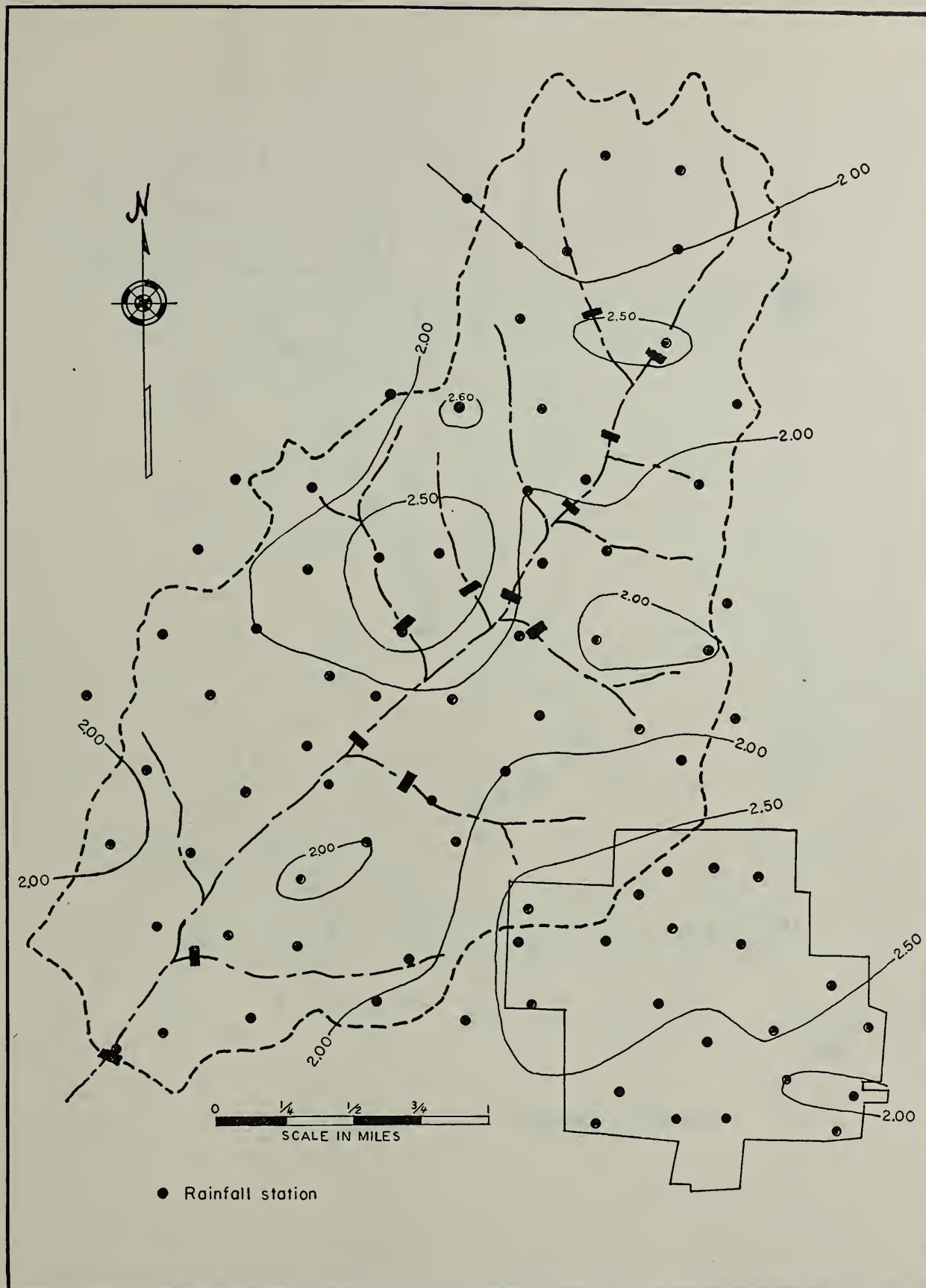


FIGURE 9.—Isohyetal map of storm of October 25, 1939, Little Mill Creek drainage basin.

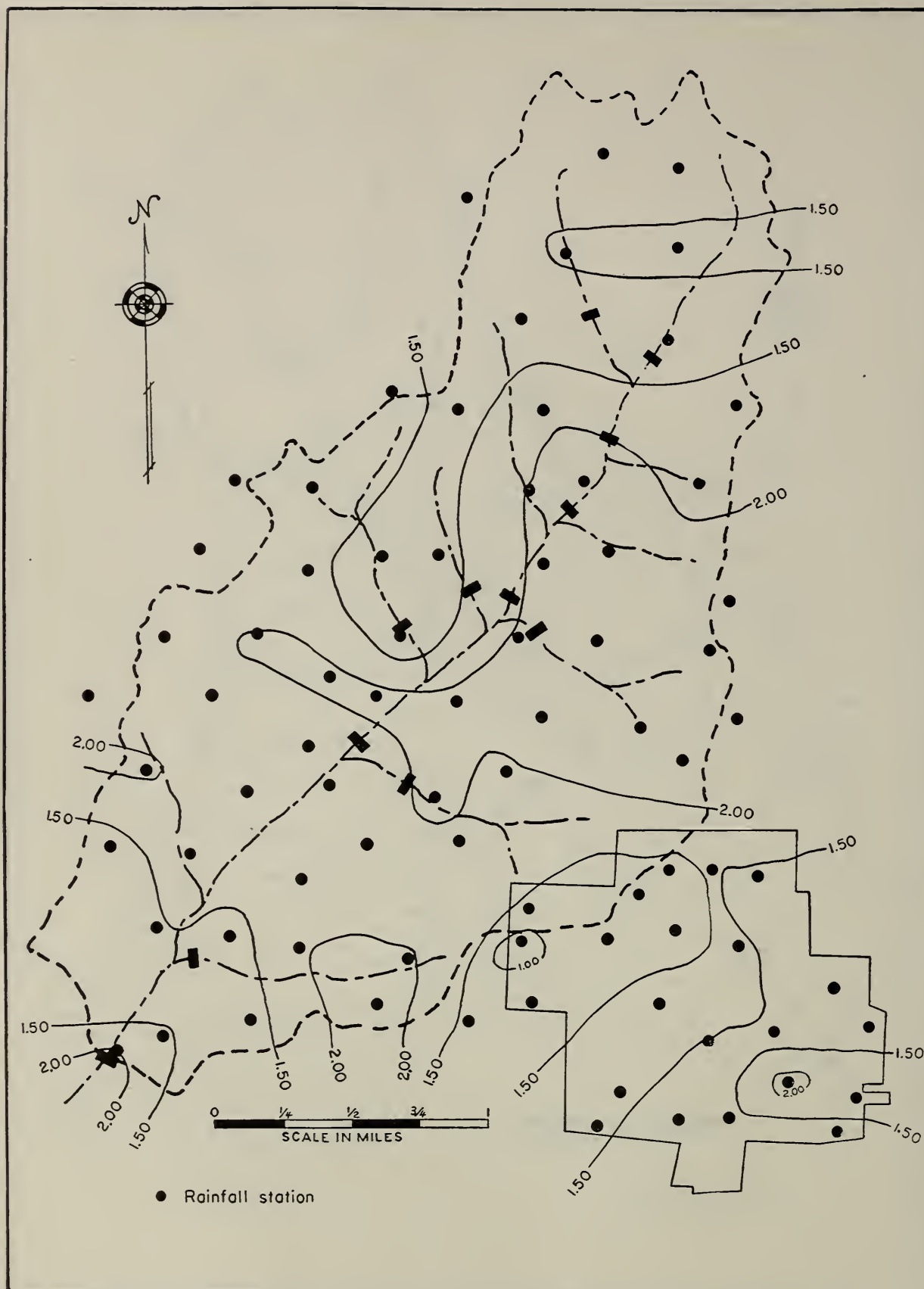


FIGURE 10.—Isohyetal map of storm of October 26-27, 1939, Little Mill Creek drainage basin.

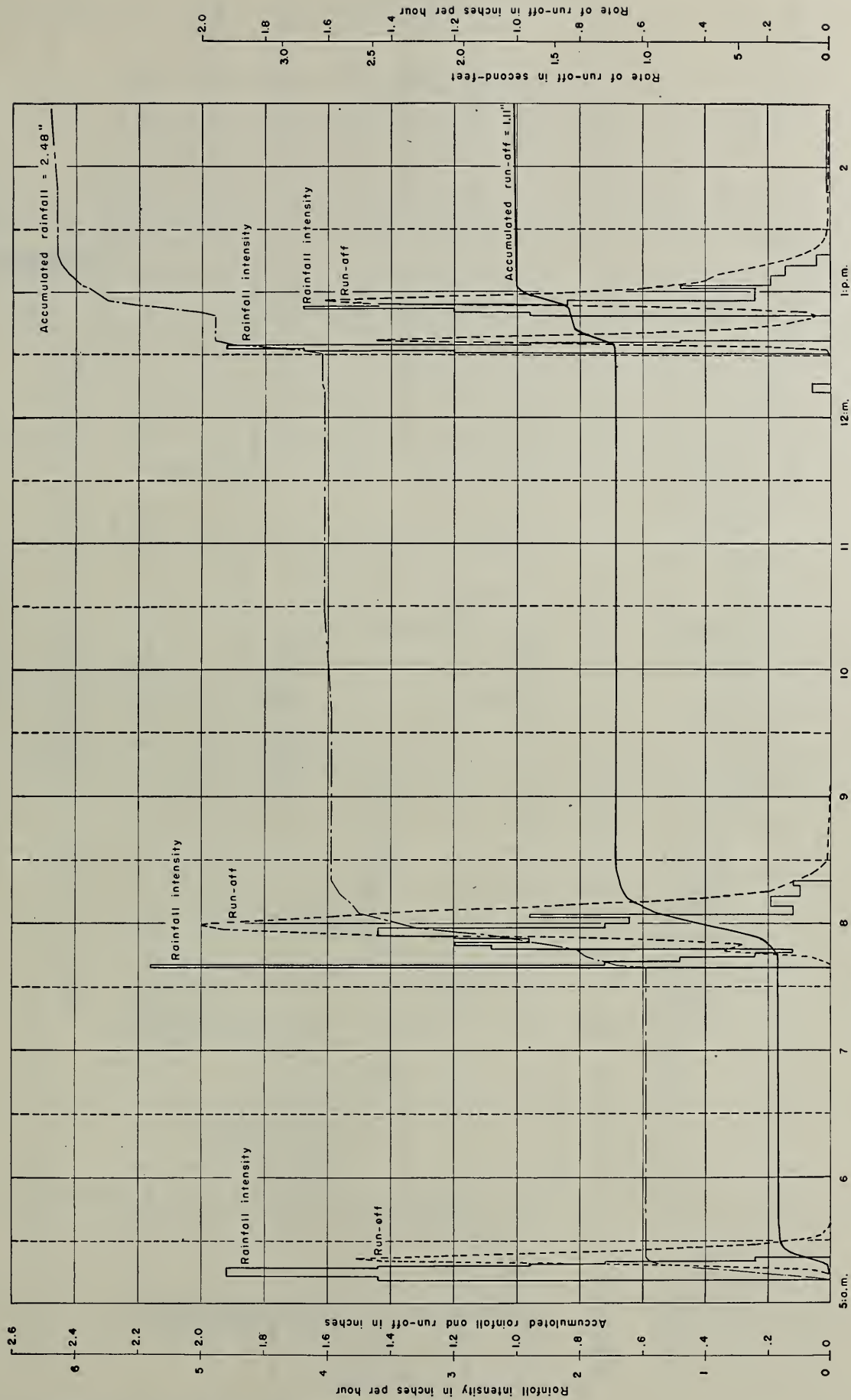


FIGURE 11.—Rainfall and run-off for watershed 109 for storm of July 8, 1939.

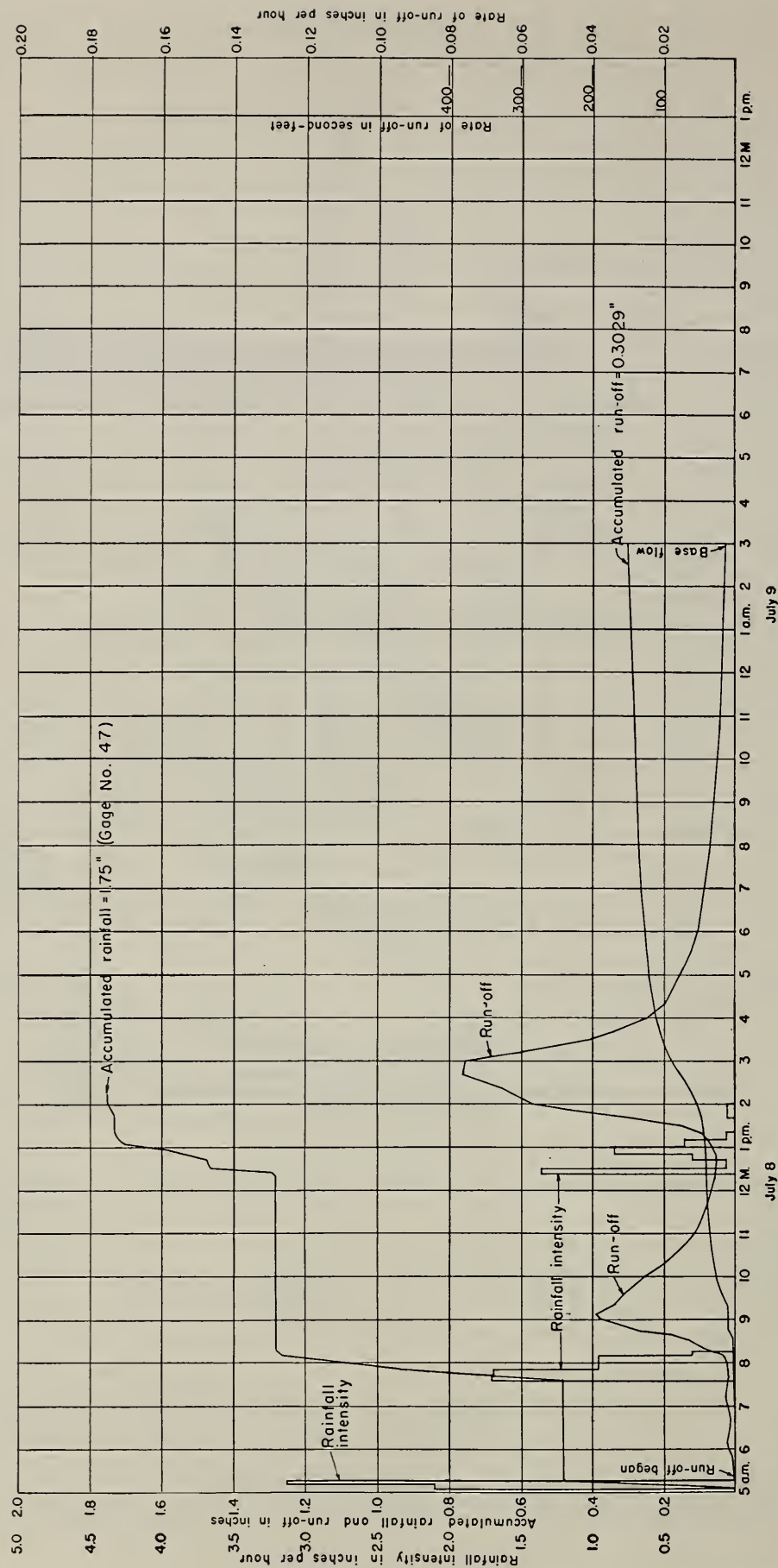


FIGURE 12.—Rainfall and run-off for watershed 97 for storm of July 8, 1939.

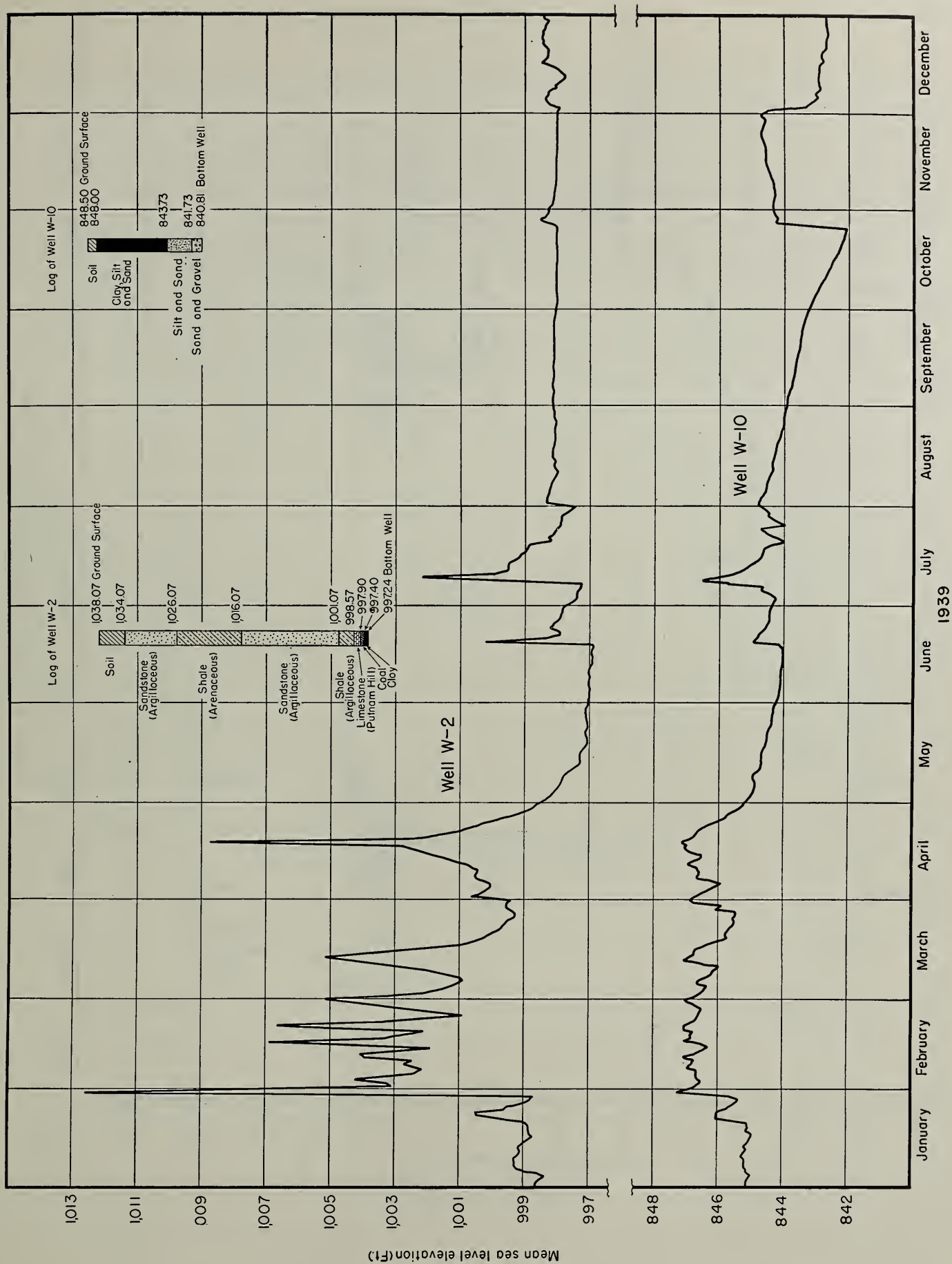


FIGURE 13.—Water level in wells 2 and 10, 1939.

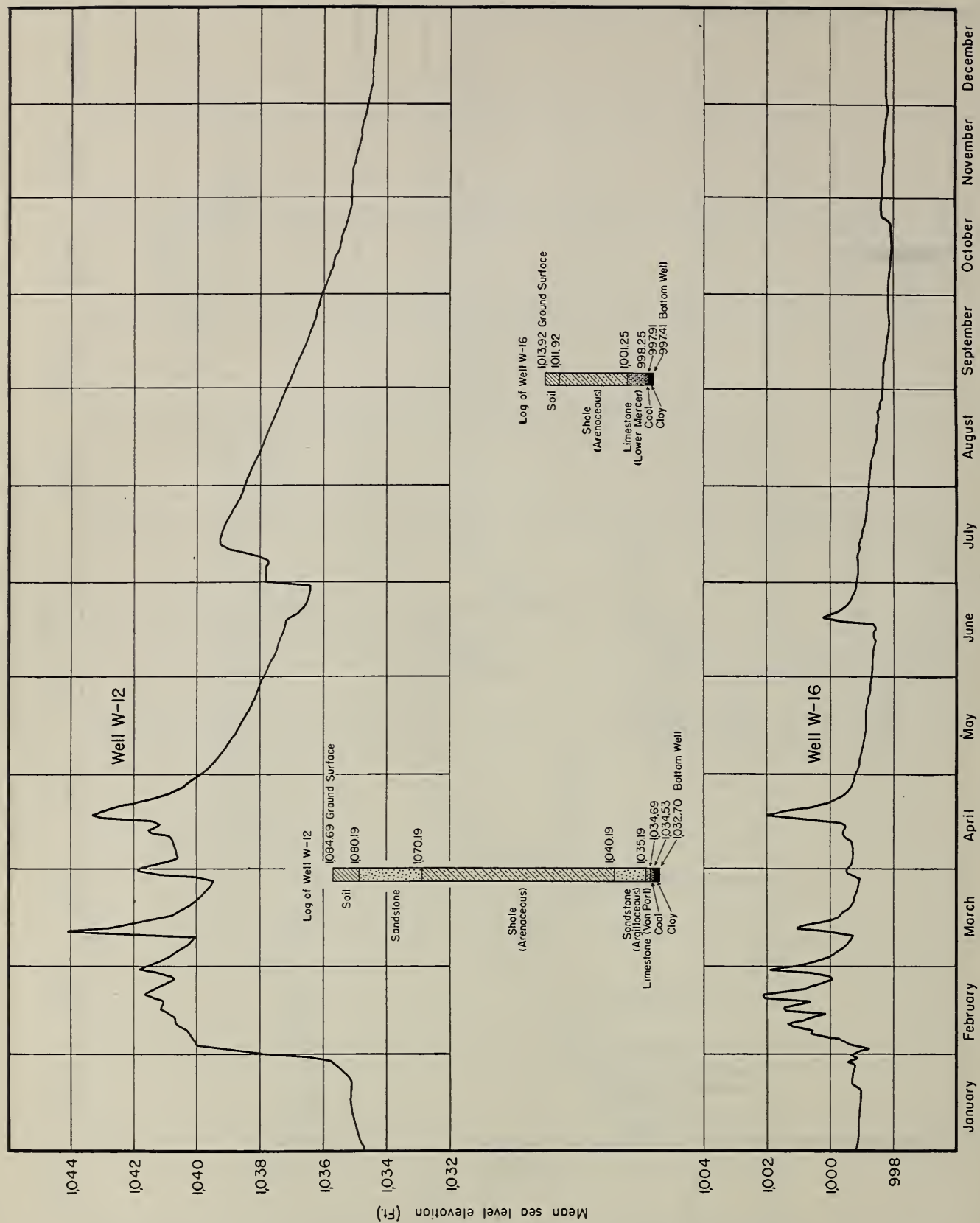


FIGURE 14.—Water level in wells 12 and 16, 1939.

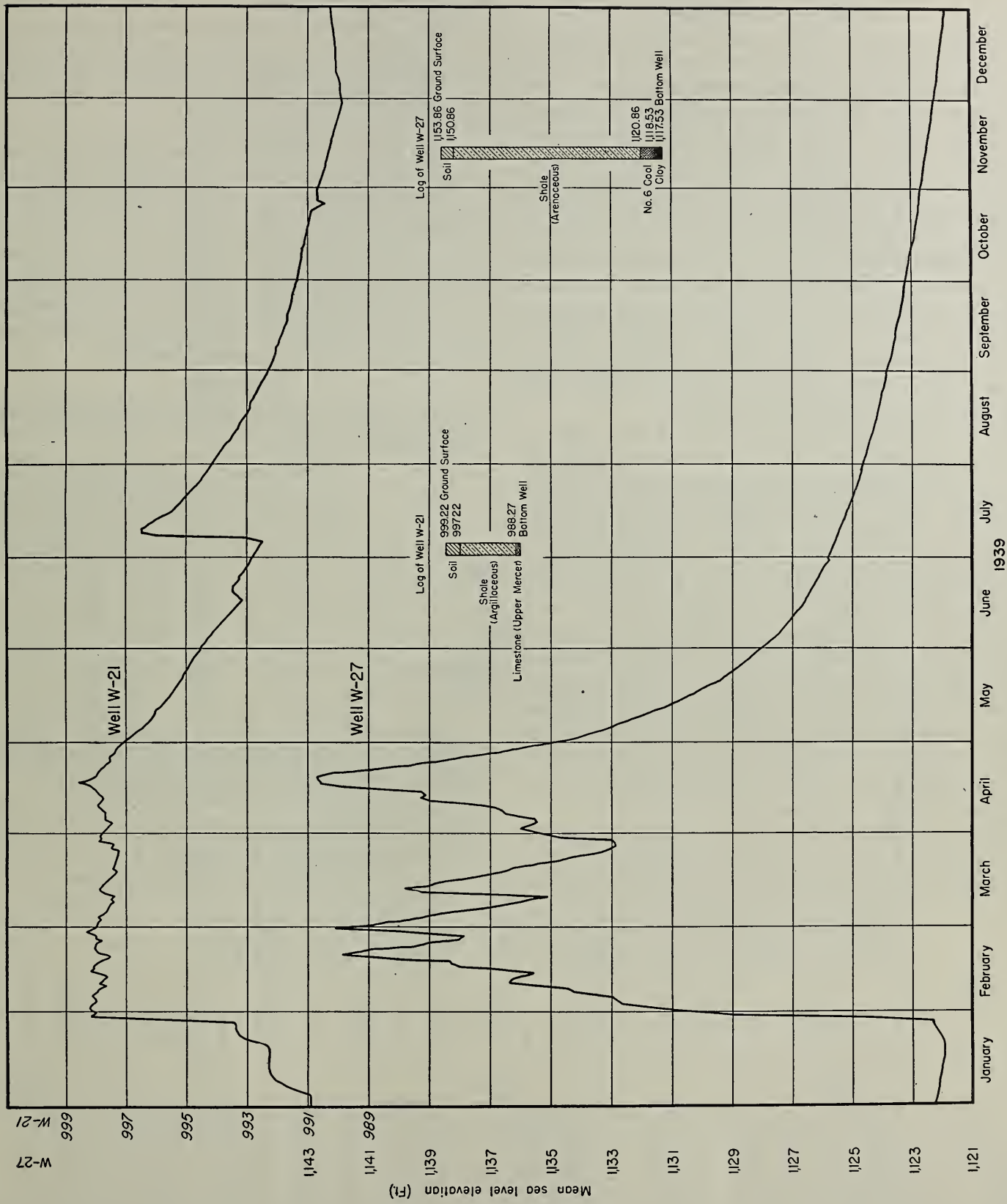


FIGURE 15.—Water level in wells 21 and 27, 1939.

TABULAR DATA

EXPLANATION OF TABLES

TABLES 12 TO 46. SUMMARY OF RAINFALL AND RUN-OFF FROM WATERSHEDS

In the note at the head of each table the location, physical characteristics, land use, measurements, and a summary of all the available records are given. The gages from which the amount of rainfall is computed are listed under "precipitation." The amount recorded for watersheds of 10 acres or smaller is that measured at one centrally located gage; that for watersheds from 10 to 500 acres in area is the Thiessen average of the amounts observed at all the gages listed; that for watersheds larger than 500 acres is the arithmetic average. The duration of rainfall and the maximum rates are determined from a selected recording gage.

Short periods of no rain within a general rainfall period were deducted to obtain the duration recorded in the table. The average intensity is the total amount divided by this actual duration.

The time recorded as the time run-off rise began is that at which the stage began to rise significantly. This ordinarily follows or coincides with the beginning of rainfall. In a very few records it precedes the time recorded as beginning of rainfall. This apparent inconsistency generally occurs during the summer months when extremely local showers travel slowly across the watershed causing run-off at the gaging station 1 to 2 minutes before the collection of rainfall in the rain gage.

The total amount of run-off for each rain period is that resulting from the total amount of rainfall recorded. For rain periods having hydrographs that rise from and return to zero the value is basic data with no interpretation. For other periods, the rates of run-off at the time rise began and at the time the run-off for the period was totaled are given.

The period of rise is the time between the beginning of rise and the maximum rate and is tabulated only if

TABLE 2.—Monthly and annual evaporation, wind movement, and relative humidity at the central meteorological station, 1939¹

Month	Wind movement from 5 p. m. to 8 a. m. ²		Night evaporation (5 p. m. to 8 a. m.)						Wind movement from 8 a. m. to 5 p. m. ²		Day evaporation (8 a. m. to 5 p. m.)						5 p. m. to 5 p. m.					
			Weather Bu- reau class A pan ³		Colorado pan ⁴		Bureau of Plant Indus- try pan ⁵				Weather Bu- reau class A pan ³		Colorado pan ⁴		Bureau of Plant Indus- try pan ⁵		Evaporation			Average wind velocity	Average relative hu- midity	
	Water tem- perature ⁶	Evaporation	Water tem- perature ⁶	Evaporation	Water tem- perature ⁶	Evaporation	Water tem- perature ⁷	Evaporation	Water tem- perature ⁷	Evaporation	Water tem- perature ⁷	Evaporation	Weather Bu- reau class A pan ³	Colorado pan ⁴	Bureau of Plant In- dustry pan ⁵							
	Total	Average ve- locity	Water tem- perature ⁶	Evaporation	Water tem- perature ⁶	Evaporation	Water tem- perature ⁶	Evaporation	Total	Average ve- locity	Water tem- perature ⁷	Evaporation	Water tem- perature ⁷	Evaporation	Water tem- perature ⁷	Evaporation	Weather Bu- reau class A pan ³	Colorado pan ⁴	Bureau of Plant In- dustry pan ⁵	Average wind velocity	Average relative hu- midity	
	Miles per hour	°F.	Inches	°F.	Inches	°F.	Inches	Miles per hour	°F.	Inches	°F.	Inches	°F.	Inches	Inches	Inches	Inches	Inches	Miles per hour	Per- cent		
April.....	1,718	3.8	36	2.38	32	1.91	28	1,704	6.3	46	2.63	54	3.09	54	3.38	6.51	5.00	9.24	5.1	58		
May.....	916	2.0	52	2.70	40	2.96	41	2,96	1,099	3.9	64	4.16	78	1.75	78	2.02	6.86	4.71	4.98	3.0	61	
June.....	763	1.7	55	3.05	47	3.19	48	3,00	920	3.4	76	4.71	87	2.13	88	2.46	7.75	5.32	5.46	2.6	74	
July.....	733	1.6	55	3.91	47	3.52	48	3,20	836	3.0	75	3.89	87	2.88	88	2.93	7.80	6.40	6.13	2.3	72	
August.....	534	1.1	56	3.20	47	3.04	48	3,56	781	2.8	74	3.10	88	2.04	88	1.26	6.29	5.08	4.82	2.0	71	
September.....	862	1.9	51	3.32	44	2.94	44	3,41	996	3.7	67	2.72	80	2.37	80	2.11	6.04	5.32	5.52	2.8	72	
October.....	1,101	2.4	41	1.91	36	3.46	35	2,40	1,404	5.0	54	3.49	65	3.53	64	2.84	5.40	6.99	5.24	3.7	66	
Apr. 1 to Oct. 31	6,627	2.1	49	20.47	42	21.02	42	20,11	7,740	4.0	65	24.70	77	17.79	77	17.00	46.65	38.82	41.39	3.4	68	

¹ Jan. 1 to Mar. 31 and Nov. 1 to Dec. 31 not included because of winter conditions.

² Wind movement is taken from an anemometer 18 inches above the ground at the evaporation pans.

³ U. S. Weather Bureau type pan, diameter 4 feet and depth 10 inches, twice-daily

the maximum rate is the first peak of a complex, multiple-peak hydrograph.

Under "remarks" the approximate moisture content of the surface soil on the small watersheds is described as wet (moisture more than 25 percent of dry weight), fairly wet (20 to 25 percent), moist (12 to 20 percent), and dry (less than 12 percent).

TABLES 61 TO 96. RUN-OFF FOR SELECTED STORMS

These tables give for each watershed the run-off rates and amounts for each of the four greatest storms in sufficient detail to accurately reproduce the hydrograph. No attempt has been made to terminate these tables at the actual end of surface run-off, they have been carried considerably beyond the point where base flow is resumed in order that those using the record would have access to all available details.

TABLES

TABLE 1.—Monthly and annual temperature, precipitation, relative humidity, wind movement, and sunshine duration at the central meteorological station, 1939

Month	Temperature ¹			Total precipitation ²	Average relative humidity ³	Average wind velocity ⁴	Sunshine duration ⁵
	Maximum	Minimum	Mean				
	°F.	°F.	°F.	Inches	Percent	Miles per hour	Percent
January.....	64	7	32	2.03	76	9	32
February.....	68	0	31	4.20	84	9	45
March.....	80	10	39	3.59	74	9	52
April.....	78	22	45	3.80	58	9	46
May.....	89	31	63	1.12	61	5	70
June.....	95	50	71	6.45	74	4	48
July.....	89	51	71	6.77	72	4	46
August.....	92	55	71	1.27	71	4	50
September.....	96	46	68	1.08	66	4	57
October.....	88	25	56	4.12	73	4	51
November.....	67	24	40	.56	81	5	27
December.....	58	6	33	.94	86	7	11
Year.....	96	0	52	35.93	73	6.1	45

¹ Maximum and minimum temperatures are instantaneous extremes for the indicated month or year. Mean temperature is the average of the mean for each day, which is the arithmetic average of the maximum and minimum for the day.

² Precipitation is measured with an unshielded recording rain gage.

³ Relative humidity is the arithmetic average of the daily 8 a. m. and 5 p. m. psychrometer observations.

⁴ Wind velocity is measured with an anemometer and is the quotient of the total wind movement divided by the number of hours in the period.

⁵ Sunshine duration is the quotient of the total hours of sunshine divided by the maximum hours of possible duration for this locality.

TABLE 1.—Monthly and annual temperature, precipitation, relative humidity, wind movement, and sunshine duration at the central meteorological station, 1939¹

move- ment from n. to m. ²	Day evaporation (8 a. m. to 5 p. m.)						5 p. m. to 5 p. m.					
	Weather Bu- rean class A pan ³		Colorado pan ⁴		Bureau of Plant Indus- try pan ⁵		Evaporation			Average wind velocity	Average relative hu- midity	
	Water tem- perature ⁷	Evaporation	Water tem- perature ⁷	Evaporation	Water tem- perature ⁷	Evaporation	Weather Bu- rean class A pan ³	Colorado pan ⁴	Bureau of Plant In- dustry pan ⁵			
Average ve- locity	Water tem- perature ⁷	Evaporation	Water tem- perature ⁷	Evaporation	Water tem- perature ⁷	Evaporation	Weather Bu- rean class A pan ³	Colorado pan ⁴	Bureau of Plant In- dustry pan ⁵	Average wind velocity	Average relative hu- midity	
Miles per hour	°F.	Inches	°F.	Inches	°F.	Inches	Inches	Inches	Inches	Miles per hour	Per- cent	
6.3	46	2.63	54	3.09	54	3.38	6.51	5.00	9.24	5.1	58	
3.9	64	4.16	78	1.75	78	2.02	6.86	4.71	4.98	3.0	61	
3.4	76	4.71	87	2.13	88	2.46	7.75	5.32	5.46	2.6	74	
3.0	75	3.89	87	2.88	88	2.93	7.80	6.40	6.13	2.3	72	
2.8	74	3.10	88	2.04	88	1.26	6.29	5.08	4.82	2.0	71	
3.7	67	2.72	80	2.37	80	2.11	6.04	5.32	5.52	2.8	66	
5.0	54	3.49	65	3.53	64	2.84	5.40	6.99	5.24	3.7	73	
4.0	65	24.70	77	17.79	77	17.00	46.65	38.82	41.39	3.4	68	

readings. ⁴Colorado type pan 3 feet deep and 3 feet square; twice-daily readings.

⁵ Bureau of Plant Industry type pan, diameter 6 feet and depth 2 feet; twice-daily readings.

⁷ Average of the 5 p. m. daily temperatures.

TABLE 3.—Daily and monthly maximum, minimum, and average temperature ¹ at the central meteorological station, 1939
[Maximum for the year, 96° F.; minimum, 0°; average, 52°]

Day	January			February			March			April			May			June			July			August			September			October			November			December			
	Maximum	Minimum	Average	Maximum	Minimum	Average	Maximum	Minimum	Average	Maximum	Minimum	Average	Maximum	Minimum	Average	Maximum	Minimum	Average	Maximum	Minimum	Average	Maximum	Minimum	Average	Maximum	Minimum	Average	Maximum	Minimum	Average	Maximum	Minimum	Average				
1	45	26	35	40	18	30	35	24	30	50	33	40	55	31	44	82	64	72	78	56	69	83	63	73	87	61	74	58	48	52	38	35	41	49	30	44	
2	46	34	41	47	33	40	42	19	30	49	26	37	52	32	47	83	65	73	78	61	70	84	68	74	88	61	75	64	45	56	46	31	36	50	40	42	
3	56	33	45	52	24	38	46	26	38	46	26	38	57	36	51	80	54	72	84	60	73	73	68	70	89	64	76	69	45	56	39	30	35	40	31	33	
4	61	38	49	54	11	18	54	35	44	43	27	35	67	38	54	78	52	67	80	68	73	78	64	70	82	69	71	78	47	62	40	28	34	32	31	32	
5	64	43	54	59	8	25	65	44	53	49	24	40	75	45	62	82	52	67	80	63	71	81	55	69	72	57	62	77	58	41	30	36	34	30	32		
6	42	30	38	40	34	36	54	30	37	42	32	36	82	54	69	89	56	75	88	68	76	83	59	72	72	49	61	80	61	70	47	27	37	39	31	35	
7	54	30	41	42	30	34	35	21	29	33	23	28	82	58	71	95	59	75	89	68	78	89	68	70	96	53	78	84	54	70	50	32	42	57	31	43	
8	51	31	39	55	30	41	50	17	34	41	27	32	82	60	70	88	58	74	85	66	75	89	64	75	95	66	79	88	65	76	38	33	39	55	29	35	
9	58	34	47	47	27	36	53	33	45	50	26	39	78	55	61	84	59	72	83	67	75	84	62	73	82	61	70	88	67	77	51	25	37	52	28	40	
10	56	35	49	57	22	43	45	27	35	73	42	57	72	56	62	79	63	72	78	52	68	84	55	68	82	60	63	82	64	71	67	32	50	53	38	47	
11	42	31	36	30	14	21	46	31	39	55	35	43	72	53	55	89	56	68	76	52	65	82	59	75	71	48	60	69	49	54	42	27	36	38	25	37	
12	34	27	30	42	17	29	60	38	42	37	22	29	62	50	61	80	53	64	83	59	72	86	68	79	75	49	60	64	43	53	52	26	37	50	33	37	
13	29	23	25	53	28	40	48	28	36	48	26	37	61	42	49	66	50	55	86	68	77	88	67	75	89	50	73	65	37	51	48	26	38	38	31	36	
14	29	14	22	54	34	45	59	28	44	46	32	40	69	43	54	73	52	60	80	66	74	84	65	75	94	64	77	49	34	42	54	29	44	35	28	29	
15	36	13	26	34	12	25	56	30	45	52	41	45	69	42	58	88	50	69	73	56	64	86	62	75	91	68	79	63	33	44	61	33	47	33	22	29	
16	33	28	31	22	4	13	35	24	28	46	38	43	72	50	58	88	74	78	77	51	65	88	66	76	93	65	75	69	38	53	64	34	50	53	39	46	
17	32	25	29	38	19	30	28	18	22	67	40	56	76	47	64	89	67	80	72	55	63	82	63	66	72	55	65	49	35	42	63	38	52	39	46		
18	32	23	27	48	26	37	29	15	19	57	40	48	75	51	63	74	65	70	64	56	60	85	64	72	73	47	60	60	39	47	56	40	49	58	35	44	
19	26	16	21	68	38	55	39	10	26	45	37	42	85	54	70	83	67	72	79	65	71	79	67	70	77	58	65	74	54	64	41	32	33	39	31	33	
20	33	13	25	50	28	41	49	26	40	47	38	42	77	60	67	83	66	73	79	65	71	79	67	70	77	58	65	74	54	64	41	32	33	39	31	33	
21	48	31	37	28	16	23	42	19	32	54	39	45	79	64	67	82	68	74	64	60	62	79	59	66	72	53	60	67	56	61	40	34	37	35	23	25	
22	47	23	22	22	7	13	44	29	37	57	40	47	79	61	69	80	69	73	78	58	69	76	55	66	74	46	61	60	42	53	37	33	36	33	21	27	
23	27	10	20	28	0	14	66	25	47	71	41	57	79	59	71	74	63	68	82	60	71	80	55	69	82	47	67	48	38	43	42	36	38	34	15	26	
24	32	24	29	32	16	25	80	42	61	78	49	65	84	47	64	81	59	70	84	67	74	82	60	72	85	48	71	58	49	48	40	34	37	31	17	24	
25	25	7	15	29	12	22	78	51	63	78	55	66	79	56	71	85	66	74	86	69	75	80	60	69	86	65	74	62	42	54	39	25	32	35	18	28	
26	24	8	15	38	30	34	71	55	61	72	56	63	89	57	75	83	61	72	83	66	74	78	58	68	74	59	51	66	69	58	63	42	24	31	28	29	29
27	25	9	18	39	25	33	55	33	38	70	54	61	89	64	76	80	61	72	87	67	76	82	57	69	74	52	62	68	61	65	47	25	36	29	21	23	
28	38	13	28	68	35	49	43	27	34	62	42	52	86	68	75	82	67	73	89	66	76	82	60	70	82	60	73	68	44	39	42	47	26	24	25	25	
29	38	32	35	29	25	37	58	38	48	51	38	48	81	60	70	84	66	71	76	66	69	82	60	70	84	66	73	47	25	40	52	28	40	27	23	23	
30	52	24	40	40	18	21	50	34	43	52	34	44	77	56	72	79	62	71	78	66	69	83	58	70	39	53	52	51	32	46	48	37	42	24	21	23	23
31	24	18	21	31	18	21	40	33	36	44	22	22	52	59	76	82	62	71	81	62	72	85	60	71	85	60	71	46	39	42	42	14	6	11	11	11	
Month	64	7	45	68	0	31	80	10	39	78	22	42	89	31	63	85	50	71	89	51	71	92	55	71	96	46	68	88	25	56	67	24	40	58	6	33	

¹ The maximum and minimum temperatures are obtained from maximum and minimum thermometers, and the average shown is the arithmetic mean of the 24 hourly readings for the day as taken from the thermograph.

TABLE 4.—Daily ¹ rainfall at selected stations, 1939

Date	Recording gage No. ² —											
	1	7	8	14	27	29	44	47	54	56	Y102	119
January:												
5	0.02	0.02	0.02	0.02	0.00	0.02	0.02	0.02	0.01	0.01	0.01	0.01
6	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
9	0.05	0.05	0.05	0.05	0.03	0.04	0.05	0.02	0.03	0.04	0.02	0.05
13 ³	0.30	0.39	0.33	0.51	0.55	0.43	0.24	0.42	0.60	0.62	0.14	0.64
16 ³	0.06	0.08	0.08	0.08	0.07	0.07	0.07	0.07	0.07	0.07	0.09	0.11
18 ³	0.10	0.11	0.11	0.12	0.09	0.12	0.07	0.09	0.13	0.13	0.09	0.17
20 ³	0.02	0.02	0.02	0.02	0.02	0.03	0.02	0.02	0.02	0.02	0.01	0.02
23 ³	0.01	0.03	0.02	0.04	0.02	0.02	0.03	0.02	0.03	0.03	0.00	0.01
26 ³	0.10	0.14	0.12	0.14	0.11	0.11	0.12	0.11	0.16	0.16	0.09	0.17
29	0.54	0.56	0.57	0.61	0.55	0.60	0.54	0.55	0.59	0.60	0.47	0.54
30	0.76	1.20	1.24	1.24	0.96	0.70	0.75	0.94	0.94	0.89	0.67	0.87
February:												
2	0.34	0.43	0.43	0.39	0.44	0.30	0.42	0.38	0.38	0.39	0.38	0.42
3 ³	0.25	0.17	0.14	0.23	0.20	0.21	0.20	0.19	0.20	0.15	0.19	0.22
6	0.12	0.15	0.12	0.13	0.12	0.13	0.14	0.13	0.13	0.12	0.14	0.13
9	0.33	0.34	0.32	0.34	0.32	0.26	0.30	0.34	0.34	0.34	0.26	0.37
10	0.27	0.26	0.28	0.32	0.24	0.29	0.31	0.26	0.24	0.26	0.29	0.22
14	0.27	0.25	0.27	0.26	0.25	0.24	0.25	0.24	0.26	0.25	0.24	0.25
15 ⁴	1.14	1.09	1.06	1.09	1.06	1.17	1.00	1.03	0.96	0.92	1.00	1.13
19	0.28	0.36	0.27	0.37	0.30	0.32	0.30	0.29	0.30	0.27	0.26	0.31
20	0.28	0.26	0.29	0.28	0.28	0.29	0.34	0.27	0.30	0.29	0.34	0.29
21 ³	0.31	0.25	0.26	0.36	0.35	0.33	0.25	0.35	0.29	0.19	0.39	0.29
26	0.42	0.40	0.43	0.38	0.43	0.45	0.32	0.38	0.43	0.39	0.43	0.44
28	0.27	0.27	0.25	0.28	0.28	0.23	0.25	0.27	0.30	0.30	0.27	0.29
March:												
5	0.32	0.26	0.32	0.32	0.29	0.33	0.24	0.31	0.31	0.31	0.30	0.28
11	0.41	0.40	0.42	0.42	0.47	0.40	0.43	0.46	0.44	0.42	0.44	0.44
12	1.42	1.17	1.18	1.31	1.42	1.26	1.23	1.23	1.36	1.14	1.47	1.17
15	0.06	0.07	0.07	0.08	0.08	0.07	0.09	0.09	0.07	0.08	0.06	0.02
24	0.11	0.12	0.13	0.14	0.18	0.17	0.17	0.10	0.11	0.11	0.12	0.09
27	0.43	0.37	0.42	0.39	0.42	0.43	0.30	0.34	0.37	0.39	0.40	0.51
29	0.08	0.14	0.08	0.09	0.12	0.04	0.12	0.10	0.12	0.11	0.11	0.13
30	0.63	0.66	0.70	0.73	0.69	0.77	0.72	0.73	0.69	0.76	0.69	0.73
April:												
1	0.01	0.01	0.01	0.01	0.02	0.03	0.01	0.02	0.01	0.03	0.06	0.03
5	0.02	0.02	0.02	0.02	0.02	0.02	0.03	0.02	0.02	0.02	0.03	0.04
6 ⁴	0.66	0.65	0.64	0.65	0.66	0.64	0.64	0.65	0.62	0.62	0.66	0.70
9 ³	0.11	0.09	0.07	0.09	0.10	0.08	0.13	0.12	0.11	0.12	0.11	0.13
10	0.27	0.34	0.33	0.31	0.29	0.28	0.29	0.26	0.25	0.25	0.25	0.26
11	0.37	0.31	0.31	0.34	0.32	0.34	0.32	0.28	0.28	0.30	0.35	0.35
12 ³	0.05	0.04	0.04	0.05	0.05	0.06	0.07	0.03	0.05	0.05	0.04	0.04
14	0.10	0.13	0.12	0.09	0.10	0.06	0.14	0.14	0.14	0.15	0.13	0.15
15	0.50	0.50	0.50	0.54	0.49	0.61	0.54	0.54	0.57	0.60	0.54	0.56
16	0.24	0.23	0.23	0.25	0.25	0.26	0.16	0.24	0.27	0.26	0.22	0.39
17	0.42	0.57	0.45	0.37	0.57	0.37	0.57	0.38	0.52	0.41	0.67	0.58
18	0.57	0.62	0.61	0.65	0.65	0.53	0.66	0.55	0.59	0.63	0.50	0.64
21	0.10	0.10	0.12	0.10	0.09	0.11	0.10	0.12	0.10	0.12	0.09	0.08
25	0.03	0.03	0.03	0.03	0.03	0.02	0.03	0.02	0.02	0.03	0.03	0.02
26	0.04	0.03	0.04	0.04	0.03	0.05	0.06	0.04	0.05	0.06	0.06	0.06
27	0.03	0.04	0.03	0.02	0.00	0.02	0.01	0.01	0.01	0.00	0.00	0.00
30	0.08	0.08	0.08	0.08	0.06	0.07	0.06	0.06	0.07	0.06	0.06	0.07
May:												
8	0.06	0.05	0.05	0.06	0.05	0.05	0.06	0.06	0.05	0.05	0.05	0.06
9	0.31	0.51	0.45	0.47	0.56	0.72	0.62	0.49	0.48	0.37	0.52	0.50
10	0.03	0.06	0.05	0.08	0.04	0.01	0.03	0.03	0.06	0.04	0.02	0.01
16	0.03	0.01	0.02	0.02	0.00	0.03	0.00	0.02	0.00	0.00	0.00	0.00
21	0.29	0.45	0.25	0.32	0.42	0.21	0.22	0.16	0.11	0.15	0.41	0.58
22	0.07	0.12	0.13	0.10	0.09	0.15	0.10	0.05	0.08	0.10	0.17	0.09
28	0.25	0.25	0.37	0.32	0.27	0.32	0.34	0.35	0.31	0.33	0.27	0.27
June:												
2	0.25	0.22	0.26	0.23	0.17	0.21	0.17	0.18	0.20	0.26	0.23	0.37
3	0.18	0.19	0.24	0.25	0.17	0.20	0.21	0.18	0.21	0.24	0.20	0.41
7	0.04	0.04	0.04	0.05	0.13	0.10	0.21	0.20	0.22	0.21	0.17	0.15
8	0.00	0.01	0.01	0.00	0.01	0.01	0.07	0.10	0.13	0.10	0.16	0.19
9	0.13	0.16	0.15	0.16	0.20	0.17	0.23	0.19	0.20	0.25	0.19	0.23
10	0.11	0.13	0.11	0.18	0.18	0.22	0.38	0.38	0.65	0.73	0.77	0.45

TABLE 4.—Daily ¹ rainfall at selected stations, 1939—Continued

Date	Recording gage No. 2—											
	1	7	8	14	27	29	44	47	54	56	Y102	119
June—Con.												
11	0.20	0.22	0.20	0.14	0.18	0.13	0.17	0.14	0.23	0.14	0.18	0.12
13	0.82	0.84	0.80	0.81	0.84	0.83	0.85	0.84	0.84	0.84	0.85	0.96
18	2.02	2.21	2.14	1.98	2.29	2.14	(⁵) 2.03	2.14	2.15	1.93	2.14	2.14
19	0.84	0.95	1.01	0.79	0.79	0.53	2.47	0.52	0.56	0.53	0.90	0.44
20	0.03	0.04	0.04	0.04	0.01	0.03	0.05	0.03	0.03	0.05	0.08	0.07
21	0.03	0.02	0.04	0.03	0.04	0.03	0.04	0.03	0.04	0.06	0.04	0.07
22	0.87	0.56	0.70	0.41	0.30	0.37	0.48	0.23	0.44	0.56	0.54	0.74
29	0.87	0.96	0.90	0.82	0.49	0.57	0.45	0.39	0.32	0.23	0.30	0.19
30	0.00	0.01	0.00	0.00	0.00	0.01	0.01	0.01	0.03	0.00	0.03	0.03
July:												
4	0.61	0.74	0.79	0.73	0.72	0.82	0.71	0.81	0.74	0.88	0.79	0.72
6	0.05	0.21	0.26	0.38	0.42	0.71	0.86	0.86	0.66	0.69	0.51	0.42
8	0.64	1.02	0.78	1.26	1.86	1.46	2.19	1.75	1.91	1.43	2.48	1.86
9	0.12	0.16	0.20	0.11	0.10	0.02	0.00	0.11	0.00	0.00	0.06	0.00
18	0.57	0.60	0.61	0.66	0.66	0.63	0.61	0.65	0.67	0.69	0.60	0.68
20	0.00	0.00	0.00	0.04	0.00	0.76	0.42	1.11	1.17	1.85	0.65	1.03
26	0.97	0.82	0.82	1.03	0.73	1.25	1.08	0.76	0.75	0.58	0.75	0.81
29	0.32	0.37	0.32	0.29	0.24	0.36	0.26	0.25	0.27	0.25	0.42	0.83
30	0.11	0.12	0.12	0.18	0.14	0.28	0.28	0.17	0.18	0.14	0.34	0.35
August:												
3	0.05	0.08	0.06	0.04	0.04	0.15	0.02	0.05	0.07	0.09	0.19	0.19
7	0.10	0.11	0.13	0.16	0.13	0.11	0.19	0.10	0.13	0.14	0.16	0.36
8	0.23	0.35	0.34	0.33	0.50	0.32	0.28	0.19	0.20	0.08	0.35	0.00
13	0.58	1.04	0.86	1.45	1.08	1.26	0.67	0.66	0.46	0.09	0.36	0.42
19	0.06	0.08	0.12	0.15	0.11	0.21	0.18	0.15	0.17	0.19	0.15	0.05
29	0.01	0.00	0.08	0.50	0.15	0.05	0.35	0.04	0.23	0.01	0.15	0.04
30	0.15	0.04	0.09	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
September:												
4	0.17	0.19	0.11	0.16	0.11	0.11	0.09	0.08	0.13	0.20	0.17	0.28
9	0.10	0.18	0.18	0.24	0.22	0.26	0.24	0.23	0.21	0.19	0.22	0.18
14	0.00	0.00	0.00	0.18	0.01	0.17	0.33	0.07	0.18	0.09	0.00	0.00
19	0.00	0.01	0.01	0.00	0.00	0.01	0.00	0.00	0.00	0.01	0.02	0.02
29	0.13	0.19	0.18	0.17	0.17	0.12	0.21	0.23	0.25	0.31	0.24	0.30
30	0.52	0.42	0.47	0.53	0.38	0.55	0.32	0.42	0.36	0.37	0.45	0.37
October:												
10	0.24	0.25	0.25	0.25	0.22	0.25	0.29	0.22	0.25	0.25	0.38	0.30
19	0.02	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00
23	0.02	0.02	0.01	0.01	0.00	0.01	0.01	0.01	0.01	0.01	0.02	0.00
25	1.84	2.00	1.80	1.75	2.07	1.89	1.92	1.79	1.81	1.79	1.86	1.77
26	0.22	0.64	0.55	0.69	1.00	0.48	0.73	0.83	0.71	0.65	0.79	0.53
27	1.07	1.22	1.20	1.27	1.17	1.26	1.38	1.26	1.32	1.37	1.48	1.30
November:												
7	0.11	0.13	0.12	0.11	0.08	0.09	0.10	0.07	0.08	0.10	0.10	0.07
10	0.15	0.16	0.16	0.14	0.14	0.19	0.16	0.14	0.15	0.16	0.13	0.16
18	0.03	0.06	0.03	0.04	0.06	0.03	0.04	0.04	0.04	0.05	0.01	0.05
20	0.13	0.16	0.13	0.14	0.20	0.14	0.14	0.17	0.20	0.20	0.18	0.30
21	0.10	0.10	0.09	0.11	0.11	0.11	0.13	0.11	0.23	0.11	0.11	0.10
December:												
2	0.40	0.41	0.40	0.39	0.39	0.56	0.39	0.38	0.37	0.38	0.39	0.40
3	0.32	0.25	0.28	0.30	0.26	0.16	0.37	0.27	0.30	0.31	0.20	0.20
5	0.06	0.06	0.07	0.04	0.02	0.03	0.05	0.03	0.05	0.06	0.03	0.05
10	0.05	0.05	0.05	0.05	0.03	0.06	0.03	0.03	0.05	0.05	0.04	0.04
13	0.32	0.34	0.27	0.31	0.29	0.28	0.34	0.25	0.29	0.29	0.34	0.34
19	0.08	0.09	0.05	0.07	0.10	0.08	0.12	0.09	0.10	0.11	0.10	0.11
20 ⁴	0.07	0.06	0.06	0.05	0.04	0.10	0.11	0.04	0.08	0.05	0.05	0.05
27 ³	0.14	0.12	0.17	0.19	0.22	0.16	0.12	0.19	0.23	0.17	0.05	0.30
31 ³	0.00	0.00	0.05	0.02	0.01	0.02	0.03	0.00	0.01	0.02	0.00	0.00
Year	31.62	34.72	33.61	36.15	35.51	35.85	36.14	34.36	36.28	35.38	36.20	37.59

TABLE 5.—Soil moisture (percent of dry weight) of designated depth intervals at stations and on dates indicated, 1939

Sampling station ¹ and depth interval	January			February				March			April				May				June			
	3	11	30 ⁵	7	13	20 ⁵	28 ⁵	6	22	29 ⁶	5 ⁶	13	20	26 ⁶	3	10 ⁶	17	25	5	12	20 ⁵	28
Pasture watersheds No. 102 and 104: ²	Per- cent	Per- cent	Per- cent	Per- cent	Per- cent	Per- cent	Per- cent	Per- cent	Per- cent	Per- cent	Per- cent	Per- cent	Per- cent	Per- cent	Per- cent	Per- cent	Per- cent	Per- cent	Per- cent	Per- cent	Per- cent	Per- cent
0-8 inches	29.2	25.3	28.6	26.3	26.1	29.4	27.9	25.2	24.2	25.5	24.4	25.7	25.6	23.9	21.3	22.3	16.0	11.9	11.3	16.6	26.1	19.4
8-15 inches	22.3	21.8	25.5	23.6	22.8	24.4	25.1	22.7	21.1	22.3	22.5	21.9	21.9	21.1	18.9	19.6	15.7	12.4	11.9	14.9	23.2	18.3
22-28 inches																						
32-40 inches																						
Wooded watershed No. 131: ³																						
0-8 inches	24.8	24.9	27.1	28.1	27.3	30.9	27.1	24.9	25.4	29.8	27.5	29.5	27.7	26.6	25.6	25.1	22.6	19.3	18.3	24.9	25.9	22.6
8-15 inches	19.7	18.0	20.7	21.7	21.1	21.5	23.3	23.0	20.9	21.7	20.9	21.8	19.9	20.1	20.2	21.1	18.9	17.3	15.0	18.3	21.7	18.2
22-28 inches																						
32-40 inches																						
Cultivated watershed No. 109: ⁴																						
0-8 inches	29.5	25.4	33.4	28.7	27.9	30.0	30.6	25.8	24.7	23.0	24.8	26.2	26.4	22.9	18.3	22.6	16.1	15.4	14.0	16.7	26.8	17.9
8-15 inches	24.9	22.9	28.2	23.9	22.4	25.2	25.9	24.3	22.3	22.1	21.2	22.5	24.5	20.9	17.1	20.2	16.6	15.6	14.1	16.0	24.4	17.7
22-28 inches																						
32-40 inches																						
Cultivated watershed No. 123: ⁴																						
0-8 inches	37.0	28.2	39.5	31.5	30.4	35.5	36.6	28.4	27.0	26.7	27.1	30.1	28.0	25.4	20.4	24.8	17.3	14.5	14.5	20.2	30.1	21.5
8-15 inches	25.5	25.6	34.2	27.6	26.7	32.0	34.9	27.4	24.9	24.1	24.2	26.4	25.0	21.9	19.0	23.6	17.1	16.6	14.5	19.0	27.5	20.0
22-28 inches																						
32-40 inches																						

Sampling station ¹ and depth interval	July			August					September				October		November				December		
	7	17	24	1	8 ⁵	15	22	29 ⁶	6	13	19 ⁵	29 ⁶	7	26 ⁵	7 ⁶	15	21 ⁵	29	6	13 ⁵	19 ⁶
Pasture watersheds No. 102 and 104: ²	Per- cent	Per- cent	Per- cent	Per- cent	Per- cent	Per- cent	Per- cent	Per- cent	Per- cent	Per- cent	Per- cent	Per- cent	Per- cent	Per- cent	Per- cent	Per- cent	Per- cent	Per- cent	Per- cent	Per- cent	Per- cent
0-8 inches	22.4	15.4	22.9	23.8	24.8	19.5	16.6	12.4	10.7	9.2	7.6	8.6	10.6	24.7	24.4	23.8	24.9	23.8	26.7	27.2	24.7
8-15 inches	18.2	14.6	20.5	21.3	19.6	16.3	14.9	14.5	11.9	11.1	10.3	11.2	11.5	19.5	21.0	19.9	20.9	21.2	24.0	24.0	22.0
22-28 inches				18.6	18.6	17.2	16.1	14.6	13.6	12.2	11.7		13.0	16.2	18.7	18.2	19.4	19.9	22.5	21.7	20.5
32-40 inches				16.9	18.5	15.8	16.9	14.2	13.0	12.4	11.2		11.6	15.7	17.5	18.4	18.9	18.0	20.1	20.2	19.0
Wooded watershed No. 131: ³																					
0-8 inches	22.2	20.7	20.7	19.7	20.5	16.4	12.7	7.5	9.5	8.8	6.2	7.5	8.5	21.9	20.5	20.0	26.4	21.3	25.1	27.8	24.2
8-15 inches	19.9	18.1	21.4	17.1	14.7	12.6	9.0	5.6	5.8	6.2	5.0	5.1	6.2	11.9	15.0	13.9	18.9	16.2	18.5	19.3	17.5
22-28 inches				16.4	13.4	10.3	9.1	6.7	7.0	6.5	5.7		6.3	8.1	12.0	11.4	17.0	14.9	15.9	15.2	17.0
32-40 inches				15.6	14.1	10.9	10.3	8.0	8.8	6.6	7.0		7.5	9.4	11.5	9.8	15.1	14.4	14.3	13.8	15.1
Cultivated watershed No. 109: ⁴																					
0-8 inches	17.5	14.2	16.4	20.1	21.6	18.6	14.6	10.8	8.0	9.1	7.6	9.8	10.4	24.1	22.7	20.2	21.3	20.1	24.4	25.2	23.5
8-15 inches	16.6	14.8	15.6	17.8	19.7	17.0	15.1	12.0	12.5	12.3	10.7	13.3	12.7	17.6	21.1	18.0	19.5	18.5	22.2	21.1	20.7
22-28 inches				15.7	16.3	15.3	14.3	12.8	13.9	12.1	12.9		13.9	14.7	19.2	17.5	18.3	16.9	18.6	17.4	18.0
32-40 inches				15.1	15.5	15.6	14.9	12.5	12.8	13.0	12.6		12.8	14.5	17.4	16.7	17.6	15.8	16.8	15.4	16.9
Cultivated watershed No. 123: ⁴																					
0-8 inches	22.7	17.0	21.4	24.0	24.3	22.4	16.8	13.9	12.0	10.7	9.3	9.1	11.9	29.4	26.7	24.1	24.5	22.2	27.4	26.6	25.3
8-15 inches	21.0	17.3	18.7	21.7	21.8	20.7	20.6	18.5	14.9	11.7	14.0	16.1	14.7	19.6	23.5	20.5	21.4	20.5	23.5	23.3	22.3
22-28 inches				21.8	21.9	20.8	19.7	20.2	17.3	14.6	15.3	17.6	14.6	19.0	23.2	20.0	20.5	20.2	22.3	22.4	22.2
32-40 inches				20.0	19.0	20.3	20.7	18.5	16.2	16.8	14.3	16.2	14.2	18.0	20.5	18.7	19.3	18.4	21.6	21.3	20.8

¹ See fig. 2 for location of sampling stations.² 6 points sampled in duplicate for each depth interval.³ 5 points sampled in duplicate for each depth interval.⁴ 4 points sampled in duplicate for each depth interval.⁵ Samples taken after rain period.⁶ Samples taken before rain period.

TABLE 6.—Monthly and annual rainfall, run-off, and percolation for lysimeter battery No. Y101, 1939^{1 2}

Month	Rainfall (record- ing gage Y101)	Run-off ³			Percolation ³		
		Box A	Box B	Box C	Box A	Box B	Box C
	Inches	Inch	Inch	Inch	Inches	Inches	Inches
January	1.69	0.350	0.410	0.070	0.220	0.240	0.380
February	4.06	.180	.120	0	2.204	.450	2.462
March	3.46	.078	0	.012	2.820	1.516	3.194
April	3.79	.042	.018	.072	3.499	1.146	2.332
May	1.17	.006	.150	0	1.060	.904	.850
June	6.60	.036	.048	.036	.707	.628	.970
July	6.50	.048	.036	.048	1.072	.982	1.462
August	1.16	.006	0	.006	.298	.271	.400
September	1.01	0	0	.018	.036	.022	.066
October	4.53	.012	.120	.066	.024	.233	.328
November	.53	0	.012	.012	.057	.030	.160
December	1.30	.012	0	0	.046	.057	.126
Year	35.80	.770	.914	.340	12.043	6.479	12.730

¹ For soil-surface condition see table 26.

² Cover conditions: Jan. 1 and Feb. 13, mixed dormant grasses, 2 inches high. Feb. 28 and Mar. 10, mixed dormant grasses, 1 inch high. Apr. 4, mixed grasses starting to grow, 2 inches high. Apr. 19, mixed grasses, growing stage 2 inches high. May 10, mixed grasses, growing stage 3 inches high. May 26, mixed grasses, growing stage 4 inches high. June 14, mixed grasses, growing stage 7 inches high. June 24 and July 13, mixed grasses, growing stage 11 inches high. Aug. 15, mixed grasses, seed stage 8 inches high. Sept. 25, mixed grasses, semidormant stage 4 inches high. Oct. 14, mixed grasses, semidormant stage 2 inches high. Oct. 26 to Dec. 31, mixed grasses, dormant 2 inches high.

³ Run-off and percolation were measured in volumetric tanks and summed up by hourly intervals.

TABLE 7.—Monthly and annual rainfall, run-off, and percolation for lysimeter battery No. Y102, 1939^{1 2}

Month	Rainfall (record- ing gage Y101)	Run-off ³			Percolation ³		
		Box A	Box B	Box C	Box A	Box B	Box C
	Inches	Inches	Inches	Inches	Inches	Inches	Inches
January	1.69	0.600	0.960	0.670	0	0	0
February	3.93	.660	.348	.552	.473	.960	.970
March	3.51	.384	.222	.504	1.423	1.478	1.340
April	3.81	.018	.060	.702	2.288	2.233	1.898
May	1.35	.120	.150	.222	.387	.469	.819
June	6.40	1.788	1.164	2.298	.150	.234	.084
July	6.75	2.500	2.928	2.724	.061	.121	.019
August	1.60	.137	.156	.228	0	0	.004
September	1.09	0	0	.050	0	0	0
October	4.51	.912	1.128	1.740	0	.042	.009
November	.53	0	0	0	0	0	0
December	1.25	.072	.018	.024	0	0	0
Year	36.42	7.191	7.134	9.694	4.782	5.537	4.643

¹ For soil surface condition see table 31, soil moisture record for watershed 109.

² Cover condition: Jan. 1–Apr. 30, corn stubble was 8 inches high; no tillage. May 1, spaded for oats. May 2, raked. May 4, fertilized and seeded to oats; fertilizer per acre, 100 pounds 0–20–20. May 10, oats growing 1 inch high. May 26, oats growing 5 inches high. June 14, oats growing 13 inches high. June 24, oats in soft dough stage 20 inches high. July 13, oats in hard dough stage 28 inches high. July 27, oats harvested and removed. Aug. 15, oats stubble 5 inches high. Sept. 1, spaded for wheat. Sept. 9, raked for wheat seed bed, preparing for winter wheat. Oct. 2, fertilized and seeded to wheat and timothy; fertilizer per acre, 150 pounds 0–16–0, 10 pounds 20–0–0. Oct. 16, wheat growing 1 inch high. Oct. 25, wheat growing 2 inches high. Nov. 9, wheat growing 3 inches high. Nov. 25, wheat growing 4 inches high. Dec. 8, wheat growing 5 inches high. Dec. 21, wheat dormant 5 inches high. Dec. 31, wheat dormant 5 inches high.

³ Run-off and percolation were measured in volumetric tanks and summed up by hourly intervals.

TABLE 8.—Area, elevation, shape, slope, soil, and land use for each watershed

Run-off station No.	Drainage area		Mean sea level elevation		Shape factor ¹	Area on slopes of—				Average slope ²	Predominate soil type	Area ³ in—			
			Lowest	Highest		0–6 per-cent	6–10 per-cent	10–20 per-cent	Over 20 per-cent			Woods	Pasture and meadow	Cultivation	Other uses
	Sq. miles	Acres	Feet	Feet		Percent	Percent	Percent	Percent	Percent		Percent	Percent	Percent	Percent
91	293	970	1,260	0.28							Coshocton silt loam	17.11	13.81	38.24	30.84
92	1.44	920	933	.44							Muskingum loam	20.27	19.55	42.58	17.60
93	1.68	1,078	916	.37							do	21.63	20.49	21.06	16.82
94	2.37	1,517	893	.32							Keene silt loam	24.51	20.72	40.26	14.51
95	4.02	2,569	858	.22							do	26.41	21.66	37.76	14.17
97	7.16	4,581	811	.24							do	25.26	22.97	38.89	12.88
5	349	980	1,180	.62							Muskingum loam	20.89	21.45	45.14	12.52
10	122	900	1,130	.46							Keene silt loam	24.27	20.14	46.68	8.91
11	292	882	1,200	.25							do	30.33	35.65	22.31	11.71
13	499	883	1,290	.50							do	45.15	16.44	23.00	15.41
20	373	834	1,180	.30							do	19.25	33.24	38.86	8.65
172	43.6	1,005	1,289	.47						22.8	do	100			
183	74.2	900	1,115	.32						14.8	Coshocton silt loam	13.28	43.16	43.13	.43
196	303	905	1,185	.62						14.0	do	25.56	20.19	44.81	9.44
102	1.25	1,165	1,238	.44	0	17	59	24	18.2	Muskingum silt loam		100			
103	.650	1,125	1,152	.37	0	64	36	0	11.3	Keene silt loam			100		
104	1.33	1,165	1,238	.36	0	0	44	56	20.7	Muskingum silt loam		100			
106	1.56	1,109	1,161	.42	32	0	68	0	14.3	Muskingum loam		100			
107	2.59	1,081	1,182	.27	0	0	78	22	15.3	do	100				
109	1.69	1,162	1,204	.60	0	71	29	0	12.7	Muskingum silt loam			100		
110	1.27	1,112	1,160	.52	0	35	65	0	13.0	Keene silt loam			100		
111	1.18	1,093	1,125	.23	0	100	0	0	7.5	Coshocton silt loam			100		
113	1.45	1,061	1,103	.45	0	61	39	0	9.3	do			100		
115	1.61	1,100	1,126	.39	69	31	0	0	6.6	Muskingum silt loam			100		
121	1.42	1,109	1,161	.51	0	17	53	30	15.8	Muskingum loam			100		
123	1.37	1,107	1,132	.30	62	38	0	0	5.8	Keene silt loam			100		
124	2.07	1,072	1,131	.36	0	27	57	16	12.9	Coshocton silt loam		100			
128	2.21	1,082	1,248	.60	0	24	59	17	13.6	Muskingum loam			100		
129	2.47	1,177	1,276	.39	0	15	47	38	18.6	Muskingum silt loam		100			
130	1.63	1,166	1,288	.23	0	0	27	73	21.7	do		100			
131	2.21	1,158	1,289	.29	0	0	0	100	21.6	Muskingum loam		100			
134	.916	1,116	1,190	.33	0	11	47	42	23.2	Muskingum silt loam	100				
135	2.69	1,182	1,260	.43	0	10	84	6	15.3	do		100			
188	2.06	1,115	1,149	.50	0	60	40	0	9.2	do			100		
191	1.08	1,118	1,150	.33	0	55	45	0	9.4	do			100		

¹ Area divided by the square of the length.

² The average land slope is the product of the length of the contours in feet and the contour interval in feet, divided by the area in square feet.

³ The areas of the various types of cover within each watershed as obtained by a cover survey are shown in figs. 4 and 5.

⁴ Reforested April 1939, actually grass cover.

TABLE 9.—Instrumentation for each watershed

Water-shed No.	Run-off measuring station								Rain gages ³		Ground-water-level recorders	Silt-measuring device			
	Date record started	Location		Station type ¹	Mean sea level elevation at point of zero flow	Water-stage recorder						Recording	Nonre-cording	Type	Length
						Type ²	Scale: 1 inch on chart equals—								
		Latitude	Longitude				Time	Gage height							
91	Nov. 1936	40°24'23"	81°48'11"	CM	Feet 970	24-FW	Minutes 100	Feet 0.20	Number 1	Number 4	Number 2				
92	Sept. 1936	40°24'08"	81°47'41"	CM	932.6	24-FW	100	.20	3	5	4				
93	Nov. 1936	40°23'50"	81°48'05"	CM	915.6	24-FW	100	.20	3	7	6				
94	Feb. 1937	40°23'32"	81°48'24"	CM	893.2	24-FW	100	.20	3	13	9				
95	Jan. 1937	40°23'03"	81°49'04"	CM	858.2	24-FW	100	.20	5	27	15				
97	Jan. 1937	40°21'51"	81°50'20"	CM	811	24-FW	100	.20	10	50	27				
5	Mar. 1937	40°24'23"	81°48'11"	CM	980	24-FW	100	.20	2	4	3				
10	Aug. 1937	40°23'33"	81°48'19"	15-DP	900	24-FW	100	.20	1	6	1				
11	Mar. 1937	40°23'21"	81°48'58"	CM	882	24-FW	100	.20	1	7	0				
13	Aug. 1937	40°22'39"	81°48'35"	CM	882.7	24-FW	100	.20	5	9	3				
20	Mar. 1937	40°22'10"	81°49'53"	CM	834.4	24-FW	100	.20	2	10	6				
172	Jan. 1939	40°21'58"	81°48'04"	4-DP	1,005	12-FW	50	.20	2	1	2				
183	Feb. 1938	40°21'29"	81°46'53"	8-DP	900	12-FW	50	.20	2	1	2				
196	Apr. 1937	40°21'36"	81°46'04"	CM	905	24-FW	50	.20	9	3	4				
102	Mar. 1937	40°22'28"	81°47'40"	1-P	1,165	6-FW	25	.20	1	1	0	Ramser	16	5	2
103	Mar. 1939	40°21'58"	81°47'49"	2-H	1,125	6-FW	25	.20	1	0	0	do	64	5	4
104	Mar. 1937	40°22'12"	81°47'40"	1-P	1,165	6-FW	25	.20	1	1	0	do	16	5	2
106	Mar. 1939	40°22'45"	81°47'56"	2.5-H	1,109	6-FW	25	.20	1	0	0				
107	July 1938	40°21'13"	81°47'13"	2-H	1,081	6-FW	25	.20	1	0	0	Ramser	20	4	2
109	July 1938	40°22'13"	81°47'38"	3-H	1,162	6-FW	25	.20	1	1	0	do	60	8	4
110	Mar. 1939	40°21'58"	81°47'40"	2.5-H	1,112	6-FW	25	.20	1	0	0	do	40	8	4
111	Aug. 1939	40°22'04"	81°46'52"	2.5-H	1,093	6-FW	25	.20	1	0	0				
113	Aug. 1939	40°22'05"	81°46'47"	2.5-H	1,061	6-FW	25	.20	1	0	0				
115	Dec. 1938	40°22'26"	81°46'09"	2.5-H	1,100	6-FW	25	.20	1	1	0	Ramser	50	8	4
121	Mar. 1939	40°21'39"	81°48'02"	2.5-H	1,109	6-FW	25	.20	1	0	0				
123	Dec. 1938	40°22'24"	81°47'19"	2.5-H	1,107	6-FW	25	.20	1	1	0	Ramser	65	5	4
124	Aug. 1939	40°21'53"	81°46'43"	2.5-H	1,072	6-FW	25	.20	1	0	0				
128	June 1939	40°21'41"	81°47'38"	3-H	1,082	6-FW	25	.20	1	0	0	Ramser	55	8	4
129	Mar. 1938	40°22'21"	81°47'51"	1-P	1,177	6-FW	25	.20	1	0	0	do	20	5	2
130	Apr. 1938	40°22'15"	81°47'59"	0.75-P	1,166	6-FW	25	.20	1	0	0	do	20	4	2
131	May 1938	40°22'11"	81°48'13"	.5-P	1,158	6-FW	25	.20	1	23	1	do	20	3	2
134	May 1938	40°22'13"	81°48'29"	.5-P	1,116	6-FW	25	.20	1	0	0	do	20	3	2
135	Mar. 1938	40°22'23"	81°47'03"	1-P	1,182	6-FW	25	.20	1	0	0	do	20	5	2
188	July 1939	40°21'27"	81°47'41"	3-H	1,115	6-FW	25	.20	1	0	0	do	55	8	4
191	Aug. 1939	40°21'29"	81°47'45"	1.5-H	1,118	6-FW	25	.20	1	0	0				

¹ 3-H, H flume, 3 feet deep. 1-P, Parshall flume, 1-foot throat width. 15-DP, dual Parshall flume, main flume throat width of 15 feet and a small supplemental flume for low flows. CM, current-meter station with artificial control.

² Figure, number of hours per revolution; FW, vertical drum recorder, Friez type FW-1.

³ All gages used to measure the moisture supplied to the watershed are not necessarily within the watershed; they may be a short distance beyond the boundary.

TABLE 10.—Land use distribution in each watershed, 1939 ^{1 2}

Watershed No.	Wood-land	Perma-nent and semi-perma-nent pasture	Rotated crops, drilled or broadcast ³									Rotated crops, intertilled ³			Other		Total culti-vated
			Meadow		Wheat	Oats		Rye		Soybeans		Corn		Pota-toes	Idle	Miscel-lane-ous	
			Total ⁴	Plowed for winter wheat ⁵		Total ⁴	Plowed for winter wheat ⁵	Total ⁴	Plowed for winter wheat ⁵	Total ⁴	Plowed for winter wheat ⁵	Total ⁴	Plowed for winter wheat ⁵				
	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	
5	20.89	21.45	24.81	3.78	9.92	4.14	4.14	0	0	0	0	6.13	2.00	0.14	7.60	4.92	45.14
91	17.11	13.81	19.31	9.93	9.93	4.90	4.90	0	0	0	0	4.10	0	0	21.22	9.62	38.24
92	20.27	19.55	23.11	1.00	8.50	4.31	4.31	0	0	0	0	6.50	2.19	.16	11.67	5.93	42.58
93	21.63	20.49	22.27	1.45	7.93	4.06	4.06	0	0	.18	.18	6.48	2.42	.14	10.54	6.28	21.06
94	24.51	20.72	21.62	2.45	8.88	2.92	2.92	0	0	.23	.23	6.43	3.51	.18	9.01	5.50	40.26
10	24.27	20.14	12.38	6.19	23.02	0	0	0	0	0	0	11.28	11.28	0	3.09	5.82	46.68
11	30.33	35.65	9.68	6.97	9.02	1.56	1.56	0	0	0	0	2.05	.49	0	8.97	2.74	22.31
95	26.41	21.66	20.16	3.30	9.24	2.09	2.09	0	0	.21	.21	5.94	3.85	.12	9.61	4.56	37.76
13	45.15	16.44	12.89	2.85	3.40	2.78	2.78	0	0	.60	.60	3.33	.55	0	13.21	2.20	23.00
20	19.25	33.24	15.39	1.90	11.55	1.99	1.99	1.17	1.17	1.14	1.14	7.34	5.35	.28	5.23	3.42	38.86
97	25.26	22.97	20.71	2.94	8.88	2.10	2.10	.45	.45	.61	.61	5.94	3.84	.20	8.60	4.28	38.89
183	13.28	43.16	4.24	0	22.35	7.35	7.35	0	0	0	0	9.19	0	0	.28	.15	43.13
196	25.56	20.19	16.15	0	9.53	12.65	12.65	0	0	1.61	1.61	4.87	0	0	4.13	5.31	44.81

¹ Small watersheds Nos. 103, 109, 110, 111, 113, 115, 118, 121, 123, 188, and 191 in 100 percent oats followed by 100 percent wheat; small watersheds Nos. 102, 104, 124, 129, and 135 in 100 percent pasture; small watersheds Nos. 106 and 130 in 100 percent meadow; small watershed No. 128 in 100 percent soybeans, followed by 100 percent wheat; small watershed No. 131 in 100 percent woodland; small watersheds Nos. 107 and 134 in 100 percent reforested.

² For location of cultivated fields within the watersheds see figs. 1 and 5.

³ See pp. 3-4 for a description of general farm practices.

⁴ Based on field surveys.

⁵ Estimated.

TABLE 11.—Semimonthly record of the general condition of the cover ¹ and soil throughout the entire project, 1939

Date	Meadow ²		Meadow ³		Pasture ⁴		Soybeans		Oats		Woodland		Reforested land	
	Height	Soil-surface condition	Height	Soil-surface condition	Height	Soil-surface condition	Description	Height	Description	Height	Development	Soil-surface condition	Description	Height
January:	In.	Frozen 2 in-ches.	In.	Frozen 2 in-ches.	In.	Frozen 4 in-ches.	Corn stubble	In.	Corn stubble	In.	Dormant	Wet, soft	Grass and weeds	In.
3	3	Wet, firm	1	Wet, firm	1	Wet, firm	do	8	do	8	do	do	do	8
17	3	do	1	do	1	Wet, firm	do	8	do	8	do	do	do	8
February:	3	do	1	do	1	Wet, soft	do	8	do	8	do	do	do	8
13	3	do	1	do	1	Wet, firm	do	8	do	8	do	do	do	5
28	3	Moist, firm	1	do	1	Moist, firm	do	8	do	8	do	do	do	5
March 10	3	do	1	do	1	do	do	8	do	8	do	do	do	5
April:	3	do	2	do	2	Moist, firm	do	10	Plowed	10	do	Moist, loose	do	5
4	7	Wet, firm	3	do	2	Wet, firm	do	10	do	10	do	Wet, loose	Trees planted	2
19	7	do	3	do	2	do	do	10	do	10	do	do	do	5
May:	7	Moist, firm	6	do	2	Moist, firm	Plowed	2	Oats	1	Leaves appearing	Moist, soft	Grass and weeds	4
10	7	Dry, hard	10	Dry, firm	3	Dry, hard	Soybeans	5	do	5	Leaves almost developed	Dry, soft	do	8
26	7	do	10	do	3	do	do	5	do	5	do	do	do	8
June:	22	Moist, firm	24	Moist, firm	6	Moist, firm	do	13	do	13	Full leaf	Moist, soft	do	8-20
14	26	Wet, firm	4	Wet, firm	15	Wet, firm	do	20	do	20	do	Wet, soft	do	12-24
24	4	Moist, soft	16	Moist, soft	15	Moist, soft	do	28	do	28	do	Dry, soft	do	12-30
July 13	4	Moist, firm	10	Moist, firm	8	Moist, firm	do	28	Oats stubble	5	do	Dry, loose	do	12-30
August 15	4	Dry, loose	4	Very dry, loose	4	Moist, firm	Plowed	5	do	5	Leaves falling	Very dry, hard	do	16
September 25	6	do	4	do	4	Very dry, loose	do	5	do	5	do	do	do	16
October:	8	Dry, firm	4	Dry, crusted	4	Dry, hard	Wheat	1	Wheat	1	do	Moist, loose	do	14
14	8	Soggy, soft	4	Wet, soft	2	Soggy, soft	do	2	do	2	do	Wet, soft	do	12
26	8	do	4	do	2	Moist, soft	do	3	do	3	Almost all leaves off	Moist, loose	do	6
November:	8	Moist, loose	4	Moist, soft	2	Moist, soft	do	5	do	5	do	do	do	6
8	6	Moist, soft	3	do	2	do	do	5	do	5	do	do	do	6
24	2	Moist, soft	3	do	2	do	do	5	do	5	do	do	do	6
December:	2	do	3	do	2	do	do	5	do	5	do	Moist, soft	do	6
7	2	Wet, soft	3	do	2	do	do	5	do	5	do	Wet, soft	do	6
21	2	do	3	do	2	do	do	5	do	5	do	do	do	6

³ Meadow consisted of alfalfa and weeds.¹ Records for corn, rye, and potatoes are not available.⁴ Pasture consisted of timothy, clover, and weeds.

TABLE 12.—Summary of rainfall and run-off, watershed 91, 1939

LOCATION: Latitude 40°24'23'', longitude 81°48'11''.

PHYSICAL CHARACTERISTICS:

Size.—Length of principal drainage, 6,800 feet (1.29 miles).

Area, 293 acres.

Shape factor.—0.28.

Slope.—Slope has not been determined. In general, valleys are narrow and have high gradients and steep slopes. Slopes range from 5 percent to over 30 percent with a large part of the area on the steeper slopes.

Soil.—Predominating soil is Coshocton silt loam, an upland soil of residual origin derived from shale and sandstone. The surface soil is brown to grayish brown and has a depth of 6 to 8 inches. The subsoil is reddish brown to yellowish brown, ranging in texture from a silt loam to silty clay loam. Mottling begins at a depth of 24 to 36 inches. The drainage is fair to good. Shale and sandstone fragments are present in the profile.

Erosion conditions.—On the area not in woodland, 50 to 75 percent of the topsoil has been removed by sheet erosion. There are occasional gullies, more than 100 feet apart, on 10 percent of the area (estimated). Three acres are so dissected by frequent large gullies as to be unfit for agricultural use.

Special features.—Woodland covers 17 percent of this watershed, which is much less than the average (25 percent) for Mill Creek Basin.

LAND USE:

Plan.—Mixed cover, conservation practices.

Vegetal cover and soil condition.—See table 11.

MEASUREMENTS:

Precipitation.—Precipitation is measured at one recording rain gage, station 7, and four nonrecording gages, stations 2, 3, 4, and 5 (see fig. 1). The amount is obtained by Thiessen weight. Snowfall is measured by the rain gages supplemented by snow boards. Snow inventory is based on surveys and observations made on typical areas near project headquarters.

Run-off.—Run-off is measured by current-meter station with Columbus deep-notch weir control. The records of run-off are only fair since silt frequently affects the record during periods of recession.

Ground-water levels.—The records from two observation wells indicate the fluctuation of the ground-water tables.

SUMMARY OF RECORDS, OCTOBER 1937 TO DECEMBER 1939:

Rainfall.—Average annual precipitation, 36.98 inches. Maximum annual precipitation, 38.81 inches, 1938.

Run-off.—Average annual run-off, 13.62 inches. Maximum annual run-off, 15.08 inches, 1938. Maximum rate of run-off, 0.237 inches per hour (70.0 second-feet), May 20, 1938. Minimum rate of run-off, 0.000 inch per hour (0.001 second-foot), September 1939.

Date	Rainfall							Run-off							
	Time began	Duration	Total amount	Intensity				Time rise began	Rate at—		Total amount	Maximum rate		Time of maximum rate ¹	Period of rise
				Maximum for—			Average rate for duration of rain-fall		Time rise began	Time run-off totaled					
				5-minute period	15-minute period	30-minute period									
January:		Hr. min.	In.	In. per hr.	In. per hr.	In. per hr.	In. per hr.		Sec.-ft.	Sec.-ft.	In.	Sec.-ft.	In. per hr.		Hr. min.
1 to 13			0.09												
13	1:30 a. m.	12 10	.39	0.24	0.12	0.08	0.03								
13 to 29			.38												
29 ³	12:01 a. m.	24 49	1.76	1.85	.88	.62	.07	3:40 a. m.	0.104	1.58	0.66	20.1	0.0680	4:55 p. m. (30)	
30 to 31			0												
Total			2.62												
February:															
1 to 2			0												
2	2:00 a. m.	9 20	.43	.24	.20	.09	.05	4:00 a. m.	1.26	1.39	.29	3.48	.0118	3:40 p. m.	11 40
2 to 9			.32												
9	4:40 p. m.	5 27	.60	.36	.28	.28	.11	9:00 p. m.	.85	1.45	.24	4.23	.0143	2:05 p. m. (10)	
10 to 14			0												
14	8:30 p. m.	11 44	1.34	.48	.40	.35	.11	8:20 p. m.	.76	1.86	.34	16.3	.0552	2:45 a. m. (15)	6 25
15 to 19			0												
19 ³	3:40 a. m.	5 13	.62	.60	.40	.22	.12	3:40 a. m.	1.51	1.94	.43	7.96	.0269	6:30 a. m.	2 50
20			.25												
20 to 26			.67												
26	12:20 a. m.	8 25	0	.36	.24	.20	.08	12:20 a. m.	.76	1.72	.56	7.37	.0249	5:10 a. m. (28)	
26 to 28			0												
Total			4.23												
March:															
1 to 5			0												
5	12:50 a. m.	4 10	.26	.12	.08	.10	.06	1:00 a. m.	.85	1.04	.09	1.58	.0053	5:40 a. m.	4 40
5 to 11			0												
11	5:20 a. m.	15 31	1.57	.84	.44	.30	.10	5:20 a. m.	.50	2.02	.69	14.0	.0474	7:05 a. m. (12)	25 45
12 to 27			.27												
27	5:00 a. m.	8 40	.37	.12	.12	.12	.04	6:20 a. m.	.34	.42	.06	.808	.0027	6:00 p. m.	11 40
27 to 29			0												
29	4:00 p. m.	14 34	.80	.36	.24	.22	.06	2:40 a. m.	.45	1.39	.20	3.25	.0110	12:00 m. (30)	9 20
30 to 31			0												
Total			3.27												

¹ If different from date in column 1, date of maximum rate is in parentheses after the time.² Snow.³ Snow on ground.

TABLE 12.—Summary of rainfall and run-off, watershed 91, 1939—Continued

Date	Rainfall							Run-off							
	Time began	Duration	Total amount	Intensity				Time rise began	Rate at—		Total amount	Maximum rate		Time of maximum rate ¹	Period of rise
				Maximum for—			Average rate for duration of rain-fall		Time rise began	Time run-off totaled		Maximum rate	Time of maximum rate ¹		
				5-minute period	15-minute period	30-minute period									
		Hr. min.	In.	In. per hr.	In. per hr.	In. per hr.	In. per hr.		Sec.-ft.	Sec.-ft.	In.	Sec.-ft.	Ins. per hr.		Hr. min.
April:															
1 to 5			0.04												
5	11:00 p. m.	11 10	.67	0.24	0.20	0.16	0.06	12:00 p. m.	0.53	0.90	0.13	2.02	0.0068	9:00 a. m. (6)	9 10
6 to 9			.09												
9	11:00 p. m.	4 10	.31	.24	.16	.14	.07								
10			.03												
10	11:58 p. m.	5 24	.33	.48	.20	.12	.06	12:00 p. m.	.99	1.45	.11	2.11	.0071	7:00 a. m. (11)	7 10
11 to 14			.04												
14	5:50 p. m.	6 24	.28	.24	.12	.10	.04	6:00 p. m.	.94	1.04	.07	1.26	.0043	6:00 a. m. (15)	
15	2:40 p. m.	14 48	1.77	2.28	.88	.48	.12	3:00 p. m.	1.04	2.19	1.13	18.2	.0616	5:10 a. m. (18)	
16 to 30			.20												
Total			3.76												
May:															
1 to 8			.08												
8	9:00 p. m.	2 43	.56	1.44	.64	.32	.21	9:00 p. m.	.25	.29	.03	.474	.0016	12:20 p. m. (9)	
9 to 21			.11												
21	11:18 a. m.	2 36	.52	2.16	.80	.44	.20	11:20 a. m.	.18	.18	.02	.365	.0012	12:35 a. m. (22)	
22 to 28			0												
28	12:28 a. m.	17	.34	3.12	1.36	.68	1.85	12:28 a. m.	.13	.15	.007	.606	.0020	12:44 a. m.	16
28 to 31			0												
Total			1.61												
June:															
1 to 13			.97												
13	7:40 a. m.	4 55	.84	.60	.40	.36	.17	7:30 a. m.	.10	.19	.02	1.32	.0045	12:40 p. m.	5 10
13 to 18			0												
18	7:40 a. m.	16 11	3.16	1.32	1.00	.74	.20	7:40 a. m.	.10	.39	.26	3.71	.0126	5:40 a. m. (19)	
19 to 22			.06												
22	2:48 p. m.	1 10	.56	3.96	1.40	.74	.48	4:20 p. m.	.24	.45	.06	1.32	.0045	7:30 p. m.	3 10
22 to 29			0												
29	1:43 p. m.	37	.96	5.52	2.96	1.90	1.56	1:50 p. m.	.18	.29	.03	3.48	.0118	3:10 p. m.	1 20
29 to 30			0												
Total			6.55												
July:															
1 to 4			0												
4	9:48 p. m.	1 32	.75	3.48	2.04	1.26	.49	9:50 p. m.	.15	.24	.02	2.02	.0068	10:45 p. m.	55
4 to 8			.21												
8	5:12 a. m.	1 59	1.02	3.36	2.08	1.12	.51	7:40 a. m.	.16	.29	.04	3.59	.0122	1:55 p. m.	
8 to 18			.16												
18	2:50 a. m.	6 50	.60	.24	.22	.20	.09	3:40 a. m.	.15	.19	.01	.365	.0012	12:40 p. m.	9 10
18 to 26			0												
26	5:08 a. m.	37	.62	2.52	1.96	1.22	1.00	5:10 a. m.	.10	.15	.01	1.20	.0041	7:10 a. m.	2 10
26	9:24 p. m.	22	.20	1.42	.65	.40	.55	9:46 p. m.	.14	.15	.01	.720	.0024	11:50 p. m.	2 4
26 to 29			0												
29	5:00 a. m.	2 25	.37	.72	.48	.34	.15								
29 to 31			.24												
Total			4.17												
August:															
1 to 8			.19												
8	6:12 a. m.	42	.35	2.64	1.04	.54	.50								
8 to 13			0												
13	1:03 p. m.	1 1	1.04	3.00	1.16	.66	1.04	1:20 p. m.	.02	.08	.02	5.09	.0172	5:02 p. m.	
13 to 31			.12												
Total			1.70												
September:															
1 to 30			.99												
October:															
1 to 10			0												
10	4:30 p. m.	2 32	.25	.24	.20	.18	.10								
10 to 25			.05												
25	12:23 a. m.	12 54	2.64	3.60	2.00	1.04	.20	12:24 a. m.	.01	.07	.04	2.11	.0071	11:16 p. m.	
26			0												
27	3:55 a. m.	6 37	1.22	1.56	1.00	.80	.18	4:00 a. m.	.05	.08	.05	3.59	.0122	5:35 a. m.	
27 to 31			0												
Total			4.16												
November:															
1 to 30			.61												
December:															
1 to 2			.25												
2	9:30 a. m.	3 10	.41	.60	.36	.32	.13	9:40 a. m.	.03	.06	.006	.219	.0007	3:20 p. m.	
2 to 13			.11												
13	1:30 a. m.	4 50	.32	.12	.12	.09	.07	1:50 a. m.	.03	.05	.004	.096	.0003	6:40 a. m.	4 50
13 to 31			.29												
Total			1.38												
Year			35.05												

¹ If different from date in column 1, date is in parentheses after the time.

TABLE 13.—Summary of rainfall and run-off, watershed 92, 1939

LOCATION: Latitude 40°24'08'', longitude 81°47'41''.

PHYSICAL CHARACTERISTICS:

Size.—Length of principal drainage, 9,500 feet (1.80 miles).

Area, 1.44 square miles (920 acres).

Shape factor.—0.44.

Slope.—Slope has not been determined. In general, valleys are narrow with high gradients and steep slopes. Slopes range from 5 percent to over 30 percent with a large part of the area on the steeper slopes.

Soil.—Predominating soil is Muskingum loam, an upland soil derived largely from sandstone and lighter in texture throughout the profile than the Muskingum silt loam. It is rather shallow and contains numerous small sandstone fragments. The unweathered sandstone rock occurs at a depth of 18 to 30 inches.

Erosion conditions.—On the area not in woodland, 50 to 75 percent of the topsoil has been removed by sheet erosion. There are occasional gullies, more than 100 feet apart, on 5 percent of the area (estimated), and frequent gullies, less than 100 feet apart, on 5 acres (estimated). Landslips occur on 1 percent of the area. Three acres are so dissected by frequent large gullies as to be unfit for agricultural use.

LAND USE:

Plan.—Mixed cover, conservation practices.

MEASUREMENTS:

Precipitation.—Precipitation is measured at three recording rain gages, stations 1, 7, and 8, and five nonrecording gages, stations 2, 3, 4, 5, and 9 (see fig. 1). The maximum and average rainfall intensities are obtained from the recording rain gage that shows the greatest 15-minute intensity. The amount is obtained by arithmetic average. Snowfall is measured by the rain gages supplemented by snow boards. Snow inventory is based on surveys and observations made on typical areas near project headquarters.

Run-off.—Run-off is measured by current-meter station with Columbus deep-notch weir control. The records of run-off are very good since rating is fairly well developed and silt only occasionally affects recession curves.

Ground-water levels.—The records from four observation wells indicate the fluctuation of the ground-water table below this watershed.

SUMMARY OF RECORDS, SEPTEMBER 1936 TO DECEMBER 1939:

Rainfall.—Average annual precipitation, 40.54 inches. Maximum annual precipitation, 47.97 inches, 1937.

Run-off.—Average annual run-off, 14.21 inches. Maximum annual run-off, 17.85 inches, 1937. Maximum rate of run-off, gage height of 3.41 on July 16, 1937, was beyond limits of rating curve. Minimum rate of run-off, 0.00 inch per hour, September 1939.

Date	Rainfall							Run-off							
	Time began	Duration	Total amount	Intensity				Time rise began ¹	Rate at—		Total amount	Maximum rate		Time of maximum rate ¹	Period of rise
				Maximum for—			Average rate for duration of rainfall		Time rise began	Time run-off totaled		In.	Sec.-ft.		
				5-minute period	15-minute period	30-minute period									
		Hr. min.	In.	In. per hr.	In. per hr.	In. per hr.	In. per hr.		Sec.-ft.	Sec.-ft.	In.	Sec.-ft.	In. per hr.		Hr. min.
January:															
1 to 13			0.09												
13	1:30 a. m.	12 0	.49	0.24	0.12	0.08	0.04								
13 to 29			2.38												
29 ¹	12:01 a. m.	30 25	1.90	2.88	1.56	.94	.06	7:40 a. m.	0.31	3.98	0.79	78.5	0.0848	5:20 p. m. (30)	
30 to 31			0												
Total			2.86												
February:															
1 to 2			0												
2	1:50 a. m.	9 10	.40	.24	.20	.14	.04	3:00 a. m.	3.16	3.06	.29	11.7	.0126	2:30 p. m.	
3 to 9			2.32												
9	4:30 p. m.	5 20	.62	.72	.36	.24	.12	5:00 p. m.	2.12	3.48	.25	17.1	.0185	1:00 p. m. (10)	
10 to 14			0												
14	8:30 p. m.	11 10	1.40	.48	.44	.40	.13	9:00 p. m.	2.04	4.54	.42	74.8	.0808	3:30 a. m. (15)	6 30
15 to 19			0												
19 ³	3:40 a. m.	18 6	.56	.72	.44	.24	.03	4:00 a. m.	4.26	5.70	.47	25.0	.0270	6:30 a. m.	2 30
20 to 26			2.25												
26 ³	12:01 a. m.	10 58	.78	.36	.28	.18	.07	12:01 a. m.	2.04	4.12	.63	25.6	.0276	5:20 a. m. (28)	
26 to 28															
Total			4.33												
March:															
1 to 5			0												
5	12:50 a. m.	4 40	.31	.12	.12	.10	.07	1:40 a. m.	2.31	2.41	.11	4.54	.0049	6:50 a. m.	5 10
5 to 11			0												
11	5:00 a. m.	17 11	1.81	1.20	.80	.48	.11	5:20 a. m.	1.34	5.63	.81	51.6	.0556	7:40 a. m. (12)	26 20
11 to 27			.19												
27	5:00 a. m.	9 10	.47	.14	.14	.14	.05	8:20 a. m.	.95	1.15	.06	2.31	.0025	5:00 p. m.	8 40
27 to 29			0												
29	4:00 p. m.	13 35	.79	.36	.28	.22	.06	5:40 p. m.	1.04	3.27	.23	16.2	.0175	10:10 a. m. (30)	16 30
30 to 31			0												
Total			3.57												
April:															
1 to 5			.01												
5	11:00 p. m.	11 36	.71	.24	.22	.22	.06	1:20 a. m. (6)	1.48	2.45	.14	6.51	.0070	10:20 a. m. (6)	9 0
6 to 9			0												
9	11:00 p. m.	11 12	.66	.48	.28	.16	.06	1:00 a. m. (10)	2.04	2.84	.31	6.33	.0068	8:00 a. m. (11)	
10 to 14			.04												
14	5:48 p. m.	18 40	1.99	2.28	.88	.48	.11	8:00 p. m.	2.52	7.21	1.18	56.4	.0608	6:00 a. m. (18)	

¹ If different from date in column 1, date is in parentheses after the time.² Snow.³ Snow on ground.

TABLE 13.—Summary of rainfall and run-off, watershed 92, 1939—Continued

Date	Rainfall							Run-off							
	Time began	Duration	Total amount	Intensity				Time rise began ¹	Rate at—		Total amount	Maximum rate		Time of maximum rate ¹	Period of rise
				Maximum for—			Average rate for duration of rain-fall		Time rise began	Time run-off totaled		Sec.-ft.	In. per hr.		
				5-minute period	15-minute period	30-minute period									
		Hr. min.	In. 0	In. per hr.	In. per hr.	In. per hr.	In. per hr.		Sec.-ft.	Sec.-ft.	In.	Sec.-ft.	In. per hr.		Hr. min.
April—Con.															
14 to 18.			.28												
18 to 30.															
Total.			3.69												
May:			0												
1 to 8.	9:00 p. m.	2 48	.50	1.44	0.64	0.32	0.18	12:01 a. m. (9).	0.56	0.90	0.02	1.04	0.0011	4:30 p. m. (9)	16 29
8															
9 to 21.			.01												
21	11:13 a. m.	2 49	.46	2.16	.80	.44	.16	11:35 a. m.	.25	.33	.01	.660	.0007	1:40 a. m. (22)	
22 to 28.			0												
28	12:34 a. m.		.34	3.12	1.36	.68	1.70	1:32 a. m.	.11	.27	.005	.774	.0008	5:10 a. m.	3 38
28 to 31.		12	0												
Total.			1.31												
June:			0												
1 to 3.															
3	8:40 a. m.	1 40	.47	.36	.30	.22	.28	8:40 a. m.	.15	.19	.004	.308	.0003	1:00 p. m.	4 20
3 to 10.			.20												
10	12:30 p. m.	1 15	.32	.82	.36	.24	.26								
11 to 13.			0												
13	7:40 a. m.	5 25	.82	.60	.40	.36	.15	7:40 a. m.	.08	.24	.02	2.95	.0032	1:30 p. m.	5 50
14 to 18.			0												
18	7:30 a. m.	19 21	3.13	1.32	1.00	.74	.16	7:40 a. m.	.06	.77	.28	25.0	.0270	1:30 a. m. (19)	
19 to 22.			.06												
22	2:46 p. m.	1 42	.72	4.68	2.40	1.38	.42	4:40 p. m.	.50	.95	.06	21.3	.0230	6:13 p. m.	1 33
22 to 29.			0												
29	1:39 p. m.	41	.88	5.52	2.96	1.90	1.29	1:50 p. m.	.25	.74	.05	19.3	.0208	3:33 p. m.	
29 to 30.			.01												
Total.			6.61												
July:			0												
1 to 4.															
4	9:47 p. m.	2 17	.86	3.72	2.36	1.34	.38	10:00 p. m.	.15	.31	.02	7.21	.0078	11:15 p. m.	1 15
4 to 8.			0												
8	5:08 a. m.	1 38	1.04	3.48	2.20	1.16	.64	7:40 a. m.	.33	.60	.07	23.4	.0252	1:20 p. m.	
8 to 18.			.16												
18	2:50 a. m.	8 30	.63	.30	.22	.20	.07	2:50 a. m.	.16	.29	.01	.946	.0010	12:40 p. m.	9 50
18 to 26.			0												
26	5:06 a. m.	1 1	.85	3.24	2.44	1.36	.84	5:10 a. m.	.07	.19	.03	6.14	.0066	7:25 a. m.	
26 to 29.			0												
29	4:51 a. m.	3 47	.59	.72	.48	.34	.16	1:50 p. m.	.25	.74	.05	19.3	.0208	3:33 p. m.	
29 to 31.			0												
Total.			4.13												
August:															
1 to 8.			.08												
8	6:12 a. m.	58	.40	2.64	1.04	.54	.41	6:20 a. m.	.06	.07	.004	.474	.0005	8:25 a. m.	2 5
8 to 13.			0												
13	1:03 p. m.	41	.88	3.60	1.76	.88	1.29	1:18 p. m.	.03	.12	.02	6.97	.0075	5:45 p. m.	
13 to 31.			.13												
Total.			1.49												
September:															
1 to 29.			.33												
29	9:00 p. m.	5 57	.64	.60	.40	.24	.11								
30			0												
Total.			.97												
October:															
1 to 10.			0												
10	3:30 p. m.	2 52	.25	.24	.24	.16	.09								
10 to 25.			.05												
25	12:20 a. m.	30 8	3.40	3.60	2.00	1.04	.11	12:20 a. m.	.01	.15	.09	6.33	.0068	9:30 a. m. (26)	
25 to 31.			.01												
Total.			3.71												
November:															
1 to 30.			.61												
December:															
1 to 2.			0												
2	9:20 a. m.	3 49	.40	.84	.52	.34	.10	10:20 a. m.	.09	.19	.009	.698	.0008	4:40 p. m.	
2 to 13.			.11												
13	1:30 a. m.	4 50	.34	.20	.20	.14	.07	1:50 a. m.	.07	.13	.007	.349	.0004	9:30 a. m.	7 40
13 to 31.			.29												
Total.			1.14												
Year.			34.42												

¹ If different from date in column 1, date is in parentheses after the time.

TABLE 14.—Summary of rainfall and run-off, watershed 93, 1939

LOCATION: Latitude 40°23'50'', longitude 81°48'05''.

PHYSICAL CHARACTERISTICS:

Size.—Length of principal drainage, 11,200 feet (2.12 miles).*Area*, 1.68 square miles (1,078 acres).*Shape factor*.—0.37.*Slope*.—Slope has not been determined. In general, valleys are narrow and have high gradients and steep slopes. Slopes range from 5 percent to over 30 percent with a large part of the area on the steeper slopes.*Soil*.—Predominating soil is Muskingum loam, an upland soil derived largely from sandstone and lighter in texture throughout the profile than the Muskingum silt loam. It is rather shallow and contains numerous small sandstone fragments. The unweathered sandstone rock occurs at a depth of 18 to 30 inches.*Erosion conditions*.—On the area not in woodland, 50 to 75 percent of the topsoil has been removed by sheet erosion. There are occasional gullies, more than 100 feet apart, on 5 percent of the area (estimated), and frequent gullies, less than 100 feet apart, on 10 acres (estimated). Landslips occur on 1 percent of the area. Three acres are so dissected by frequent large gullies as to be unfit for agricultural use.

LAND USE:

Plan.—Mixed cover, conservation practices.

MEASUREMENTS:

Precipitation.—Precipitation is measured at three recording rain gages, stations 1, 7, and 8, and seven nonrecording gages, stations 2, 3, 4, 5, 9, 16, and 17. The maximum and average rainfall intensities tabulated are obtained from the recording rain gage that shows the greatest 15-minute intensity. The amount of rainfall on the watershed is obtained by arithmetic average. Snowfall is measured by the rain gages supplemented by snow boards. Snow inventory is based on surveys and observations made on typical areas near project headquarters.*Run-off*.—Run-off is measured by current-meter station with Columbus deep-notch weir control. The records of run-off are good since rating is fairly well developed and silt only occasionally affects recession curves.*Ground-water levels*.—The records from six observation wells indicate the fluctuation of the ground-water tables.

SUMMARY OF RECORDS, NOVEMBER 1936 TO DECEMBER 1939:

Rainfall.—Average annual precipitation, 36.98 inches. Maximum annual precipitation, 38.87 inches, 1938.*Run-off*.—Average annual run-off, 12.67 inches. Maximum annual run-off, 14.16 inches, 1938. Maximum rate of run-off, 0.276 inch per hour (300 second-feet), May 20, 1938. Minimum rate of run-off, 0.00 inch per hour, September 19, 1939.

Date	Rainfall							Run-off							
	Time began	Duration	Total amount	Intensity				Time rise began	Rate at—		Total amount	Maximum rate		Time of maximum rate ¹	Period of rise
				Maximum for—			Average rate for duration of rain-fall		Time rise began	Time run-off totaled					
				5-minute period	15-minute period	30-minute period									
January:		Hr. min.	In.	In. per hr.	In. per hr.	In. per hr.	In. per hr.		Sec.-ft.	Sec.-ft.	In.	Sec.-ft.	In. per hr.		Hr. min.
1 to 13			0.09												
13	1:30 a. m.	12 0	.49	0.24	0.12	0.08	0.04								
13 to 29			2.38												
29 ³	12:01 a. m.	30 25	1.90	2.88	1.56	.94	.06	7:40 a. m.	0.39	4.73	0.79	107	0.0984	5:35 p. m. (30)	
30 to 31			0												
Total			2.86												
February:															
1 to 2			0												
2	1:50 a. m.	9 10	.40	.24	.20	.14	.04	2:00 a. m.	3.34	3.47	.31	14.4	.0132	2:40 p. m.	12 40
2 to 9			2.32												
9	4:30 p. m.	5 20	.62	.72	.36	.24	.12	4:30 p. m.	2.27	3.91	.25	19.8	.0182	1:00 p. m. (10)	
10 to 14			0												
14	8:30 p. m.	11 10	1.40	.48	.44	.40	.13	8:40 p. m.	2.18	5.87	.44	102	.0938	3:10 a. m. (15)	6 30
15 to 19			0												
19 ³	3:40 a. m.	18 6	.56	.72	.44	.24	.03	3:40 a. m.	5.09	6.51	.48	29.6	.0273	6:40 a. m.	3 0
20 to 26			.25												
26	12:01 a. m.	10 58	2.78	.36	.28	.18	.07	3:00 a. m.	2.27	4.91	.64	31.0	.0285	5:30 a. m.	
26 to 28			0												
Total			4.33												
March:															
1 to 5			0												
5	12:50 a. m.	4 40	.31	.12	.12	.10	.07	1:00 a. m.	2.70	2.81	.11	5.48	.0050	6:20 a. m.	5 20
5 to 11			0												
11	5:00 a. m.	17 11	1.81	1.20	.80	.48	.11	5:20 a. m.	1.41	6.20	.81	69.4	.0638	7:35 a. m. (12)	
11 to 27			.19												
27	5:00 a. m.	9 10	.47	.14	.14	.14	.05	6:00 a. m.	1.09	1.24	.06	2.81	.0026	5:00 p. m.	11 0
27 to 29			0												
29	4:00 p. m.	13 35	.79	.36	.28	.22	.06	5:00 p. m.	1.18	3.47	.23	19.3	.0178	10:00 a. m. (30)	17 0
29 to 31			0												
Total			3.57												
April:															
1 to 5			.01												
5	11:00 p. m.	11 36	.71	.24	.22	.22	.06	12:01 a. m.	1.54	2.49	.13	7.94	.0073	9:00 a. m. (6)	8 59
6 to 9			0												
9	11:00 p. m.	11 20	.66	.48	.28	.16	.06	11:40 p. m.	2.10	2.94	.30	7.94	.0073	7:00 a. m. (11)	

¹ If different from date in column 1, date is in parentheses after the time.² Snow.³ Snow on ground.

TABLE 14.—Summary of rainfall and run-off, watershed 93, 1939—Continued

Date	Rainfall							Run-off							
	Time began	Duration	Total amount	Intensity				Time rise began	Rate at—		Total amount	Maximum rate		Time of maximum rate ¹	Period or rise
				Maximum for—			Average rate for duration of rain-fall		Time rise began	Time run-off totaled		Maximum rate	Time of maximum rate ¹		
				5-minute period	15-minute period	30-minute period									
		Hr. min.	In.	In. per hr.	In. per hr.	In. per hr.	In. per hr.		Sec.-ft.	Sec.-ft.	In.	Sec.-ft.	In. per hr.		Hr. min.
April—Con.															
10 to 14.			0.04												
14.	5:48 p. m.	18 40	1.99	2.28	0.88	0.48	0.11	6:20 p. m.	2.70	6.24	1.21	77.2	0.0710	5:35 a. m. (18)	
14 to 30.			.28												
Total			3.69												
May:															
1 to 8.			0												
8.	9:00 p. m.	2 48	.50	1.44	.64	.32	.18	9:20 p. m.	.62	.83	.03	1.54	.0014	3:55 p. m. (9)	
9 to 21.			.01												
21.	11:13 a. m.	2 49	.46	2.16	.80	.44	.16	11:30 a. m.	.34	.36	.02	1.04	.0010	1:05 a. m. (22)	
22 to 28.			0												
28.	12:34 a. m.	12	.34	3.12	1.36	.68	1.70	12:35 a. m.	.17	.25	.008	.869	.0081	5:00 a. m.	4 25
28 to 31.			0												
Total			1.31												
June:															
1 to 3.			0												
3.	8:40 a. m.	1 40	.47	.36	.30	.22	.28	8:40 a. m.	.21	.14	.008	.388	.0004	12:20 p. m.	3 40
3 to 10.			.20												
10.	12:30 p. m.	1 15	.32	.82	.36	.24	.26								
11 to 13.			0												
13.	7:40 a. m.	5 25	.82	.60	.40	.36	.15	7:40 a. m.	.12	.21	.02	3.34	.0021	1:30 p. m.	5 50
14 to 18.			0												
18.	7:30 a. m.	19 21	3.13	1.32	1.00	.74	.16	7:40 a. m.	.08	.91	.27	32.4	.0298	1:30 a. m. (19)	
19 to 22.			.06												
22.	2:46 p. m.	1 42	.72	4.68	2.40	1.38	.42	3:30 p. m.	.62	1.04	.06	23.5	.0216	6:20 p. m.	
22 to 29.			0												
29.	1:39 p. m.	41	.88	5.52	2.96	1.90	1.29	1:45 p. m.	.32	.74	.04	18.3	.0168	3:30 p. m.	
29 to 30.			.01												
Total			6.61												
July:															
1 to 4.			0												
4.	9:47 p. m.	2 17	.86	3.72	2.36	1.34	.38	9:50 p. m.	.20	.43	.03	7.19	.0066	11:20 p. m.	1 30
4 to 8.			0												
8.	5:08 a. m.	1 38	1.04	3.48	2.20	1.16	.64	5:10 a. m.	.29	.87	.09	41.7	.0383	1:32 p. m.	
8 to 18.			.16												
18.	2:50 a. m.	8 30	.63	.30	.22	.20	.07	3:00 a. m.	.23	.31	.02	1.18	.0011	12:20 p. m.	9 20
18 to 26.			0												
26.	5:06 a. m.	1 1	.85	3.24	2.44	1.36	.84	5:07 a. m.	.10	.26	.03	5.87	.0054	7:35 a. m.	
26 to 29.			0												
29.	4:51 a. m.	3 47	.59	.72	.48	.34	.16	5:00 a. m.	.15	.21	.16	.685	.0007	2:55 a. m. (30)	
29 to 31.			0												
Total			4.13												
August:															
1 to 8.			.08												
8.	6:12 a. m.	58	.40	2.64	1.04	.54	.41	6:15 a. m.	.08	.08	.006	.869	.0008	7:10 a. m.	55
8 to 13.			0												
13.	1:03 p. m.	41	.88	3.60	1.76	.88	1.29	1:05 p. m.	.04	.21	.03	13.6	.0125	2:37 p. m.	1 32
13 to 31.			.13												
Total			1.49												
September:															
1 to 29.			.33												
29.	9:00 p. m.	5 57	.64	.60	.40	.24	.11								
30.			0												
Total			.97												
October:															
1 to 10.			0												
10.	3:30 p. m.	2 52	.25	.24	.24	.16	.09								
10 to 25.			.05												
25.	12:20 a. m.	30 8	3.40	3.60	2.00	1.04	.11	8:00 a. m.	.003	.21	.11	26.4	.0243	9:02 a. m. (26)	
25 to 27.			0												
27 to 31.			.01												
Total			3.71												
November:															
1 to 30.			.61												
December:															
1 to 2.			0												
2.	9:20 a. m.	3 49	.40	.84	.52	.34	.10	10:25 a. m.	.15	.27	.01	.829	.0008	3:15 p. m.	4 50
2 to 13.			.11												
13.	1:30 a. m.	4 50	.34	.20	.20	.14	.07	1:50 a. m.	.08	.20	.009	.482	.0004	9:20 a. m.	7 30
13 to 31.			.29												
Total			1.14												
Year			34.42												

¹ If different from date in column 1, date is in parentheses after the time.

TABLE 15.—Summary of rainfall and run-off, watershed 94, 1939

LOCATION: Latitude 40°23'32", longitude 81°48'24".

PHYSICAL CHARACTERISTICS:

Size.—Length of principal drainage, 13,700 feet (2.70 miles).

Area, 2.37 square miles (1,517 acres).

Shape factor.—0.32.

Slope.—Slope has not been determined. In general, valleys are narrow and have high gradients and steep slopes. Slopes range from 5 percent to over 30 percent with a large part of the area on the steeper slopes.

Soil.—Predominating soil is Keene silt loam, and upland soil of residual origin derived largely from shale. The surface soil is brown to grayish brown and 6 to 8 inches deep. The subsoil is reddish brown to yellowish brown just below the surface soil. The texture is a silt loam grading into silty clay loam and then into a heavy silty clay. Slight mottling begins at a depth of 12 to 24 inches, below which appears a layer of heavy silty clay with gray predominating. Shale and sandstone fragments occur throughout the profile but are not so numerous as in the Coshocton or Muskingum soils. Drainage is fair.

Erosion conditions.—On the area not in woodland, 50 to 75 percent of the topsoil has been removed by sheet erosion. There are occasional gullies, more than 100 feet apart, on 5 percent of the area (estimated), and frequent gullies, less than 100 feet apart, on 12 acres (estimated). Landslips occur on 2 percent of the area. Three acres are so dissected by frequent large gullies as to be unfit for agricultural use.

LAND USE:

Plan.—Mixed cover, conservation practices.

MEASUREMENTS:

Precipitation.—Precipitation is measured at 3 recording rain gages, stations 1, 7, and 8, and 13 nonrecording ones. The maximum and average rainfall intensities are obtained from the recording rain gage that shows the greatest 15-minute intensity. The amount is obtained by arithmetic average. Snowfall is measured by the rain gages supplemented by snow boards. Snow inventory is based on surveys and observations made on typical areas near project headquarters.

Run-off.—Run-off is measured by current-meter station with Columbus deep-notch weir control. The records of run-off are good. Station rating is fairly well developed and there was no silt.

Ground-water levels.—The records from nine observation wells indicate the fluctuation of the ground-water tables.

SUMMARY OF RECORDS, FEBRUARY 1937 TO DECEMBER 1939:

Rainfall.—Average annual precipitation, 37.00 inches. Maximum annual precipitation, 38.77 inches, 1938.

Run-off.—Average annual run-off, 11.82 inches. Maximum annual run-off, 14.22 inches, 1938. Maximum rate of run-off, 0.225 inch per hour (344 second-feet), May 20, 1938. Minimum rate of run-off, 0.00 inch per hour, September 9, 1939.

Date	Rainfall							Run-off							
	Time began	Duration	Total amount	Intensity				Time rise began ¹	Rate at—		Total amount	Maximum rate		Time of maximum rate ¹	Period of rise
				Maximum for—			Average rate for duration of rainfall		Time rise began	Time run-off totaled					
				5-minute period	15-minute period	30-minute period									
January:		Hr. min.	In.	In. per hr.	In. per hr.	In. per hr.	In. per hr.		Sec.-ft.	Sec.-ft.	In.	Sec. ft.	In. per hr.		Hr. min.
1 to 29			0.94												
29	12:01 a. m.	30 25	1.77	2.88	1.56	0.94	0.06	7:20 a. m.	0.50	4.98	0.71	162	0.107	3:37 a. m. (30)	20 17
30 to 31			0												
Total			2.71												
February:			0												
1 to 2			.41	.24	.20	.14	.04	2:40 a. m.	4.02	4.91	.30	18.8	.0124	2:30 p. m.	
2 to 9	1:50 a. m.	9 10	.32												
9	4:30 p. m.	5 20	.56	.72	.36	.24	.10	5:00 p. m.	2.52	4.35	.21	23.0	.0152	1:00 p. m. (10)	
10 to 14			0												
14	8:30 p. m.	11 10	1.42	.48	.44	.40	.13	8:40 p. m.	2.41	5.41	.38	124	.0811	3:15 a. m. (15)	6 35
15 to 19			0												
19 ³	3:40 a. m.	18 6	.53	.72	.44	.24	.03	4:00 a. m.	5.60	7.71	.41	33.5	.0221	6:50 a. m.	2 50
20 to 26			.31												
26	12:01 a. m.	10 58	.74	.36	.28	.15	.07	2:00 a. m.	2.31	5.43	.55	35.2	.0233	5:30 a. m. (28)	
26 to 28			0												
Total			4.29												
March:			0												
1 to 5			.30	.12	.12	.10	.07	1:20 a. m.	2.77	3.05	.09	6.04	.0040	6:20 a. m.	5 0
5 to 11	12:50 a. m.	4 40	0												
11	5:00 a. m.	17 11	1.79	1.20	.80	.48	.10	5:00 a. m.	1.53	7.46	.73	78.1	.0516	7:40 a. m. (12)	
12 to 27			.19												
27	5:00 a. m.	9 10	.44	.14	.14	.14	.05	7:40 a. m.	1.21	1.40	.05	3.28	.0022	5:00 p. m.	9 20
27 to 29			0												
29	4:00 p. m.	13 35	.80	.36	.28	.22	.06	4:40 p. m.	1.40	4.19	.21	24.4	.0161	10:20 a. m. (30)	17 40
30 to 31			0												
Total			3.52												
April:			.01												
1 to 5			.69	.24	.22	.22	.06	11:20 p. m.	1.60	2.96	.12	9.87	.0065	9:20 a. m. (6)	10 0
5	11:00 p. m.	11 36	0												
6 to 9			.63	.48	.28	.16	.06	12:20 a. m. (10)	2.41	3.50	.26	9.24	.0061	7:00 a. m. (11)	
9	11:00 p. m.	11 12	.04												
10 to 14															

¹ If different from date in column 1, date is in parentheses after the time.² Snow.³ Snow on ground.

TABLE 15.—Summary of rainfall and run-off, watershed 94, 1939—Continued

Date	Rainfall							Run-off							
	Time began	Duration	Total amount	Intensity				Time rise began	Rate at—		Total amount	Maximum rate		Time of maximum rate ¹	Period of rise
				Maximum for—			Average rate for duration of rain-fall		Time rise began	Time run-off totaled		Maximum rate	Time of maximum rate ¹		
				5-minute period	15-minute period	30-minute period									
		Hr. min.	In.	In. per hr.	In. per hr.	In. per hr.	In. per hr.		Sec.-ft.	Sec.-ft.	In.	Sec.ft.	In. per hr.		Hr. min.
April—Con.															
14	5:48 p. m.	18 40	2.00	2.28	0.88	0.48	0.11	6:20 p. m.	3.02	7.20	1.12	93.1	.0615	5:40 a. m. (18)	
14 to 18			0												
18 to 30			.28												
Total			3.65												
May:															
1 to 8			0												
8	9:00 p. m.	2 48	.53	1.44	.64	.32	.19	10:00 p. m.	.67	.82	.02	1.85	.0012	4:20 p. m. (9)	
9 to 21			.01												
21	11:13 a. m.	2 49	.43	2.16	.80	.44	.15	11:30 a. m.	.34	.34	.01	1.04	.0007	1:40 a. m. (22)	
22 to 28			0												
28	12:34 a. m.	12	.31	3.12	1.36	.68	1.55	12:35 a. m.	.18	.24	.006	.814	.0005	3:00 a. m.	2 25
28 to 31			0												
Total			1.28												
June:															
1 to 3			0												
3	8:40 a. m.	1 40	.45	.36	.30	.22	.27	8:40 a. m.	.19	.13	.006	.383	.0003	1:00 p. m.	4 20
3 to 10			.20												
10	12:30 p. m.	1 15	.35	.82	.36	.24	.28								
10 to 13			0												
13	7:40 a. m.	5 25	.83	.60	.40	.36	.15	7:40 a. m.	.10	.20	.02	3.57	.0024	1:20 p. m.	5 40
14 to 18			0												
18	7:30 a. m.	19 21	3.10	1.32	1.00	.74	.16	7:40 a. m.	.07	.90	.24	38.6	.0252	1:40 a. m. (19)	
19 to 22			.06												
22	2:46 p. m.	1 42	.60	4.68	2.40	1.38	.35	3:29 p. m.	.63	.86	.04	20.6	.0135	6:55 p. m.	3 26
22 to 29			0												
29	1:39 p. m.	41	.74	5.52	2.96	1.90	1.08	1:44 p. m.	.31	.77	.03	19.3	.0126	2:59 p. m.	1 15
29 to 30			.01												
Total			6.34												
July:															
1 to 4			0												
4	9:47 p. m.	2 17	1.01	3.72	2.36	1.34	.44	9:45 p. m.	.19	.47	.03	7.96	.0053	11:35 p. m.	1 41
4 to 8			0												
8	5:04 a. m.	1 42	1.32	3.48	2.20	1.16	.78	5:04 a. m.	.29	.91	.11	60.6	.0420	1:36 p. m.	
8 to 18			.16												
18	2:50 a. m.	8 30	.65	.30	.22	.20	.08	3:00 a. m.	.20	.32	.01	1.33	.0009	1:20 p. m.	10 20
18 to 26			0												
26	5:05 a. m.	1 1	.86	3.24	2.44	1.36	.84	5:05 a. m.	.08	.22	.03	5.05	.0033	8:00 a. m.	
26 to 29			0												
29	4:51 a. m.	3 47	.56	.72	.48	.34	.15	5:05 a. m.	.12	.19	.01	.599	.0004	4:00 a. m. (30)	
30 to 31			0												
Total			4.56												
August:															
1 to 8			.08												
8	6:12 a. m.	58	.43	2.64	1.04	.54	.44	6:20 a. m.	.08	.06	.005	.736	.0005	8:10 a. m.	1 50
8 to 13			0												
13	1:03 p. m.	41	1.15	3.60	1.76	.88	1.68	1:08 p. m.	.02	.16	.03	17.1	.0113	2:54 p. m.	1 46
13 to 31			.13												
Total			1.79												
September:															
1 to 29			.33												
29	9:00 p. m.	5 57	.60	.60	.40	.24	.10								
30			0												
Total			.93												
October:															
1 to 10			0												
10	3:30 p. m.	2 52	.25	.24	.24	.16	.09								
10 to 25			.05												
25	12:17 a. m.	30 11	3.73	3.60	2.00	1.04	.11	8:00 a. m.	0	.20	.10	33.5	.0219	9:08 a. m. (26)	
25 to 27			0												
27 to 31			.01												
Total			4.04												
November:															
1 to 30			.61												
December:															
1 to 2			0												
2	9:20 a. m.	3 49	.38	.84	.52	.34	.10	10:30 a. m.	.14	.27	.008	.770	.0005	4:20 p. m.	5 50
2 to 13			.11												
13	1:30 a. m.	4 50	.33	.20	.20	.14	.07	1:45 a. m.	.08	.19	.006	.450	.0003	10:30 a. m.	8 45
13 to 31			.29												
Total			1.11												
Year			34.83												

¹ If different from date in column 1, date is in parentheses after the time.

TABLE 16.—Summary of rainfall and run-off, watershed 95, 1939

LOCATION: Latitude 40°23'03'', longitude 81°49'04''.

PHYSICAL CHARACTERISTICS:

Size.—Length of principle drainage 18,700 feet (3.54 miles).

Area 4.02 square miles (2,569 acres).

Shape factor.—0.22.*Slope*.—Slope has not been determined. In general, valleys are narrow and have high gradients and steep slopes. Slopes range from 5 percent to over 30 percent with a large part of area on the steeper slopes.*Soil*.—Predominating soil is Keene silt loam, an upland soil of residual origin derived largely from shale. The surface soil is brown to grayish brown and 6 to 8 inches in depth. The subsoil is reddish brown to yellowish brown just below the surface soil. The texture is a silt loam grading into silty clay loam and then into a heavy silty clay. Slight mottling begins at a depth of 12 to 24 inches, below which appears a layer of heavy silty clay with gray predominating. Shale and sandstone fragments occur throughout the profile but are not so numerous as in the Coshocton or Muskingum soils. Drainage is fair.*Erosion conditions*.—On the area not in woodland, 50 to 75 percent of the topsoil has been removed by sheet erosion. There are occasional gullies, more than 100 feet apart, on 5 percent of the area (estimated), and frequent gullies, less than 100 feet apart, on 30 acres (estimated). Landslips occur on 3 percent of the area. Six acres are so dissected by large and frequent gullies as to be unfit for agricultural use.

LAND USE:

Plan.—Mixed cover, conservation practices.

MEASUREMENTS:

Precipitation.—Precipitation is measured at 5 recording rain gages, stations 1, 7, 8, 14, and 27, and 27 nonrecording gages. The maximum and average intensities are obtained from the recording gage that shows the greatest 15-minute intensity. The amount is obtained by arithmetic average. Snowfall is measured by the rain gages supplemented by snow boards. Snow inventory is based on surveys and observations made on typical areas near project headquarters.*Run-off*.—Run-off is measured by current-meter station with Columbus deep notch weir control. The records of run-off are good. Station rating is fairly well developed and there was no silt.*Ground-water levels*.—The records from 15 observation wells indicate the fluctuation of the ground-water tables in this watershed.

SUMMARY OF RECORDS, JANUARY 1937 TO DECEMBER 1939:

Rainfall.—Average annual precipitation, 40.79 inches. Maximum annual precipitation, 47.97 inches, 1937.*Run-off*.—Average annual run-off, 14.97 inches. Maximum annual run-off, 20.65 inches, 1937. Maximum rate of run-off, 0.160 inch per hour (415 second-feet), January 14, 1937. Minimum rate of run-off, 0.000 inch per hour, September 1939.

Date	Rainfall							Run-off							
	Time began	Duration	Total amount	Intensity				Time rise began ¹	Rate at—		Total amount	Maximum rate		Time of maximum rate ¹	Period of rise
				Maximum for—			Average rate for duration of rain-fall		Time rise began	Time run-off totaled					
				5-minute period	15-minute period	30-minute period									
		Hr. min.	In.	In. per hr.	In. per hr.	In. per hr.	In. per hr.		Sec.-ft.	Sec.-ft.	In.	Sec.-ft.	Inches per hr.		Hr. min.
January:															
1 to 13			0.05												
13	12:30 a. m.	12 40	.49	0.24	0.16	0.16	0.04								
13 to 29			2.31												
29 ³	12:01 a. m.	26 11	1.69	.48	.36	.30	.06	7:00 a. m.	0.770	9.33	0.69	128	0.0494	5:55 p. m. (30)	
30 to 31			0												
Total			2.54												
February:															
1 to 2			0												
2	1:50 a. m.	10 30	.42	.24	.20	.16	.04	2:20 a. m.	7.78	8.28	.30	29.3	.0113	3:00 p. m.	
2 to 9			2.34												
9	4:30 p. m.	6 47	.60	.72	.36	.24	.09	5:00 p. m.	5.76	9.87	.24	38.3	.0148	1:30 p. m. (10)	
10 to 14			0												
14	8:20 p. m.	16 43	1.37	.48	.44	.40	.08	9:00 p. m.	5.37	10.4	.41	180	.0695	3:40 a. m. (15)	6 40
14 to 19			0												
19 ³	3:40 a. m.	6 43	.64	.96	.48	.26	.10	4:00 a. m.	11.0	12.9	.55	54.8	.0212	3:20 a. m. (20)	
20 to 26			2.35												
26 ³	12:01 a. m.	11 16	.89	.36	.28	.22	.08	2:00 a. m.	5.18	10.1	.68	61.9	.0239	6:00 a. m. (28)	
26 to 28			0												
Total			4.61												
March:															
1 to 5			0												
5	12:50 a. m.	6 10	.31	.24	.16	.14	.05	1:00 a. m.	5.76	5.37	.14	11.6	.0045	7:00 a. m.	6 1
5 to 11			0												
11	5:00 a. m.	6 35	1.77	1.20	.80	.48	.27	5:20 a. m.	3.06	11.6	.90	138	.0533	8:00 a. m. (12)	
12 to 27			.26												
27	5:00 a. m.	9 19	.43	.14	.14	.10	.05	8:00 a. m.	2.61	3.06	.06	6.61	.0026	6:00 p. m.	10 1
27 to 29			0												
29	4:00 p. m.	16 40	.82	.36	.28	.24	.05	4:00 a. m. (30).	3.58	8.85	.26	48.9	.0189	10:50 a. m. (30)	6 50
30 to 31			0												
Total			3.59												
April:															
1 to 5			.02												
5	11:00 p. m.	11 00	.72	.24	.22	.22	.07	12:01 a. m. (6).	3.58	6.66	.15	20.0	.0077	10:20 a. m. (6)	10 19
6 to 9			.08												

¹ If different from date in column 1, date is in parentheses after the time.² Snow.³ Snow on ground.

TABLE 16.—Summary of rainfall and run-off, watershed 95, 1939—Continued

Date	Rainfall							Run-off							
	Time began	Duration	Total amount	Intensity				Time rise began ¹	Rate at—		Total amount	Maximum rate		Time of maximum rate ¹	Period of rise
				Maximum for—			Average rate for duration of rain-fall		Time rise began ¹	Time run-off totaled		Maximum rate	Time of maximum rate ¹		
				5-minute period	15-minute period	30-minute period									
		Hr. min.	In.	In. per hr.	In. per hr.	In. per hr.	In. per hr.		Sec.-ft.	Sec.-ft.	In.	Sec.-ft.	In. per hr.		Hr. min.
April—Con.															
9	11:00 p. m.	10 5	0.63	In. 0.48	0.28	0.16	0.06	12:20 a. m. (10).	5.37	6.93	0.35	18.7	0.0072	7:40 a. m. (11)	
10 to 14			.05												
14	5:48 p. m.	18 9	2.00	2.40	.96	.50	.11	6:20 p. m.	6.39	13.0	1.35	170	.0656	5:55 a. m. (18)	
14 to 18			0												
18 to 30			.15												
Total			3.65												
May:															
1 to 8			.06												
8	9:00 p. m.	2 34	.60	1.62	.86	.46	.23	9:20 p. m.	1.26	1.88	.03	4.65	.0018	5:00 p. m. (9)	19 40
9 to 21			.01												
21	11:11 a. m.	1 36	.43	1.44	.88	.48	.27	1:20 p. m.	.736	.736	.01	2.20	.0008	3:30 a. m. (22)	
22 to 28			0												
28	12:34 a. m.	12	.30	3.12	1.20	.60	1.50	12:40 a. m.	.323	.473	.008	1.60	.0006	4:40 a. m.	4 0
28 to 31			0												
Total			1.40												
June:															
1 to 3			0												
3	8:40 a. m.	2 0	.43	.36	.30	.22	.22	10:00 a. m.	.405	.267	.009	.667	.0002	5:10 p. m.	7 10
3 to 10			.34												
10	12:30 p. m.	1 0	.39	.96	.64	.36	.39								
10 to 13			0												
13	7:40 a. m.	4 50	.83	.60	.44	.36	.17	11:40 a. m.	.341	.599	.02	.754	.0003	2:10 p. m.	2 30
13 to 18			0												
18	7:30 a. m.	18 17	3.04	1.32	1.00	.74	.17	10:00 a. m.	.204	2.14	.26	61.1	.0236	2:10 a. m. (19)	
19 to 22			.05												
22	12:40 p. m.	3 48	.50	4.68	2.40	1.38	.13	2:40 p. m.	1.40	1.46	.04	17.2	.0066	7:35 p. m.	4 55
22 to 29			0												
29	1:39 p. m.	41	.67	5.52	2.96	1.90	.98	3:00 p. m.	.770	1.33	.03	19.6	.0076	4:30 p. m.	1 30
29 to 30			0												
Total			6.25												
July:															
1 to 4			0												
4	9:47 p. m.	2 15	1.10	3.72	2.36	1.34	.49	11:15 p. m.	.633	1.15	.04	7.78	.0030	8:50 a. m. (6)	
4 to 8			0												
8	5:06 a. m.	2 6	1.59	4.37	2.84	1.54	.76	6:58 a. m.	.991	2.61	.19	180	.0695	1:58 p. m.	
8 to 18			.10												
18	2:50 a. m.	7 30	.67	.36	.30	.22	.09	3:00 a. m.	.523	.770	.02	3.31	.0013	1:40 p. m.	10 40
18 to 26			.06												
26	5:06 a. m.	1 10	.92	3.24	2.44	1.36	.79	5:10 a. m.	.219	.549	.03	12.2	.0047	6:40 a. m.	1 30
26 to 29			0												
29	4:50 a. m.	3 17	.55	.88	.53	.32	.17	5:00 a. m.	.341	.473	.01	1.68	.0006	5:20 a. m. (30)	
30 to 31			0												
Total			4.99												
August:															
1 to 8			.04												
8	6:11 a. m.	43	.47	3.60	1.52	.76	.66	6:20 a. m.	.235	.164	.007	2.30	.0009	8:25 a. m.	2 5
8 to 13			0												
13	1:00 p. m.	2 27	1.10	2.64	1.80	.94	.45	1:00 p. m.	.104	.383	.03	24.4	.0094	3:29 p. m.	2 29
13 to 31			.27												
Total			1.88												
September:															
1 to 29			.34												
29	8:57 p. m.	7 41	.60	1.20	.40	.22	.08								
30			0												
Total			.94												
October:															
1 to 10			0												
10	3:30 p. m.	2 41	.25	.24	.24	.16	.93								
10 to 25			.02												
25	12:20 a. m.	30 35	3.90	3.60	2.00	1.04	.13	(⁴)				56.3	.0217	9:49 a. m. (26)	
26 to 31			0												
Total			4.17												
November:															
1 to 30			.59												
December:															
1 to 2			0												
2	9:00 a. m.	4 9	.40	.84	.52	.32	.10	11:20 a. m.	.341	.702	.02	1.85	.0007	5:50 p. m.	6 30
2 to 13			.30												
13	1:30 a. m.	4 10	.32	.24	.16	.14	.08	5:20 a. m.	.304	.702	.009	1.10	.0004	11:40 a. m.	6 20
13 to 31			.39												
Total			1.41												
Year			36.02												

¹ If different from date in column 1, date is in parentheses after the time.⁴ No record.

TABLE 17.—Summary of rainfall and run-off, watershed 97, 1939

LOCATION: Latitude 40°21'51'', longitude 81°50'20''.

PHYSICAL CHARACTERISTICS:

Size.—Length of principle drainage, 29,500 feet (5.48 miles).

Area, 7.16 square miles (4,581 acres).

Shape factor.—0.24.

Slope.—Slope has not been determined. In general, valleys are narrow and have high gradients and steep slopes.

Slopes range from 5 percent to over 30 percent with a large part of the area on the steeper slopes.

Soil.—Predominating soil is Keene silt loam, an upland soil of residual origin derived largely from shale. The surface soil is brown to grayish brown, 6 to 8 inches in depth. The subsoil is reddish brown to yellowish brown just below the surface soil. The texture is a silt loam grading into silty clay loam and then into heavy silty clay. Slight mottling begins at a depth of 12 to 24 inches, below which is a layer of heavy silty clay with gray predominating. Shale and sandstone fragments occur throughout the profile but are not so numerous as in the Coshocton or Muskingum soils. Drainage is fair.

Erosion conditions.—On the area not in woodland, 50 to 75 percent of the topsoil has been removed by sheet erosion. There are occasional gullies, more than 100 feet apart, on 5 percent of the area (estimated), and frequent gullies, less than 100 feet apart, on 60 acres (estimated). Landslips occur on 4 percent of the area. Six acres have been so dissected by large and frequent gullies as to be unfit for agricultural use.

LAND USE:

Plan.—Mixed cover, conservation practices.

MEASUREMENTS:

Precipitation.—Precipitation is measured at 10 recording rain gages, stations 1, 7, 8, 14, 27, 29, 44, 47, 54, and 56, and 50 nonrecording gages. The maximum and average intensities are obtained from the recording gage that shows the greatest 15-minute intensity. The amount of rainfall on the watershed is obtained by arithmetic average. Snowfall is measured by the rain gages supplemented by snow boards. Snow inventory is based on surveys and observations made on typical areas near project headquarters.

Run-off.—Run-off is measured by current-meter station with Columbus deep-notch weir control. The records of run-off are very good. The rating curve is well developed and there was no silt.

Ground-water levels.—The records from 27 observation wells indicate the fluctuation of the ground-water tables.

SUMMARY OF RECORDS, OCTOBER 1937 TO DECEMBER 1939:

Rainfall.—Average annual precipitation, 41.08 inches. Maximum annual precipitation, 47.97 inches, 1937.

Run-off.—Average annual run-off amount, 12.21 inches. Maximum annual run-off amount, 13.59 inches, 1938. Maximum rate of run-off, 0.154 inches per hour (713 second-foot), January 24, 1937. Minimum rate of run-off, 0.00 inch per hour (0.013 second-foot), September 21, 1939.

Date	Rainfall							Run-off							
	Time began	Duration	Total amount	Intensity				Time rise began ¹	Rate at—		Total amount	Maximum rate		Time of maximum rate ¹	Period or rise
				Maximum for—			Average rate for duration of rainfall		Time rise began	Time run-off totaled		Maximum rate	Time of maximum rate ¹		
				5-minute period	15-minute period	30-minute period									
		Hr. min.	In.	In. per hr.	In. per hr.	In. per hr.	In. per hr.		Sec.-ft.	Sec.-ft.	In.	Sec. ft.	In. per hr.		Hr. min.
January:															
1 to 13			0.09												
13	12:05 a. m.	13 40	.47	0.24	0.20	0.12	0.03								
13 to 29			2.33												
29 ³	12:01 a. m.	25 30	1.61	2.88	1.56	.94	.06	7:00 a. m.	1.54	11.9	0.70	232	0.0501	5:20 a. m. (30)	
30 to 31			.19												
Total			2.69												
February:															
1			0												
2	1:50 a. m.	9 40	.41	.24	.20	.16	.04	4:00 a. m.	11.9	11.9	.29	52.5	.0113	4:00 p. m.	29 0
3 to 9			2.34												
9	4:30 p. m.	7 20	.61	.72	.36	.24	.08	5:00 p. m.	8.88	17.0	.25	55.0	.0119	1:00 p. m. (10)	
10 to 14			0												
14	8:20 p. m.	15 30	1.33	.48	.44	.40	.09	8:40 p. m.	7.96	19.6	.48	330	.0713	4:00 a. m. (15)	7 20
15 to 19			0												
19 ³	3:40 a. m.	4 50	.61	.96	.48	.26	.13	4:00 a. m.	19.6	14.1	.62	110	.0238	3:40 a. m. (20)	
20 to 26			2.27												
26 ³	12:01 a. m.	12 30	1.10	.60	.44	.28	.09	2:00 a. m.	7.96	15.0	.59	119	.0257	6:30 a. m. (27)	
27 to 28			0												
Total			4.67												
March:															
1 to 5			0												
5	12:30 a. m.	5 32	.31	.24	.20	.16	.06	1:00 a. m.	8.88	9.60	.10	19.1	.0041	7:40 a. m.	6 40
6 to 11			0												
11	5:00 a. m.	16 0	1.72	1.20	.80	.48	.11	5:30 a. m.	5.30	19.1	1.01	290	.0626	8:25 a. m. (12)	2 55
13 to 27			.26												
27	4:50 a. m.	9 29	.43	.14	.14	.10	.05	8:00 a. m.	4.50	5.14	.06	10.1	.0022	7:00 p. m.	11 0
28			0												
29	4:00 p. m.	12 50	.83	.36	.28	.24	.07	3:40 a. m. (30)	5.99	14.1	.28	100	.0216	11:00 a. m.	7 20
30 to 31			0												
Total			3.55												
April:															
1 to 5			0												
5	11:00 p. m.	11 15	.69	.24	.20	.22	.06	12:00 p. m.	5.99	10.4	.15	39.7	.0086	10:20 a. m. (6)	10 20
6 to 9			.12												
9	11:00 p. m.	9 44	.62	.48	.28	.16	.06	12:00 p. m.	8.40	10.4	.32	33.7	.0073	7:40 a. m. (11)	

¹ If different from date in column 1, date is in parentheses after the time.² Snow.³ Snow on ground.

TABLE 17.—Summary of rainfall and run-off, watershed 97, 1939—Continued

Date	Rainfall							Run-off							
	Time began	Duration	Total amount	Intensity				Time rise began	Rate at—		Total amount	Maximum rate ¹		Time of maximum rate ¹	Period of rise
				Maximum for—			Average rate for duration of rain-fall		Time rise began	Time run-off totaled		In.	Sec. ft.		
				5-minute period	15-minute period	30-minute period									
		Hr. min.	In.	In. per hr.	In. per hr.	In. per hr.	In. per hr.		Sec.-ft.	Sec.-ft.	In.	Sec. ft.	In. per hr.		Hr. min.
April—Con.															
10 to 13			0.07												
14	5:40 p. m.	18 17	2.00	2.40	0.96	0.50	0.11	6:00 p. m.	9.86	20.9	1.42	336	0.0726	6:30 a. m. (18)	
14 to 30			.20												
Total			3.70												
May:															
1 to 8			.06												
8	8:56 p. m.	3 10	.53	2.10	.88	.44	.17	9:00 p. m.	2.30	3.25	.03	7.74	.0017	5:40 p. m. (9)	20 40
9 to 21			.01												
21	11:11 a. m.	1 36	.39	1.44	.88	.48	.24	3:00 p. m.	1.21	1.21	.01	2.91	.0006	6:00 a. m. (22)	15 0
22 to 28			0												
28	12:28 a. m.	18	.32	3.12	1.36	.68	1.07	12:35 a. m.	.59	.77	.008	2.20	.0005	7:40 a. m.	
28 to 31			0												
Total			1.31												
June:															
1 to 3			0												
3	8:20 a. m.	2 20	.43	.36	.30	.22	.18	8:40 a. m.	.62	.396	.008	1.15	.0002	7:00 p. m.	10 20
3 to 10			.51												
10	12:30 p. m.	54	.50	4.44	2.76	1.46	.56	12:50 p. m.	.65	.65	.01	3.64	.0008	3:15 p. m.	2 25
10 to 13			0												
13	7:30 a. m.	5 5	.86	.72	.48	.38	.17	8:00 a. m.	.349	1.04	.02	10.4	.0022	3:00 p. m.	7 0
13 to 18			0												
18	7:30 a. m.	17 22	2.90	1.71	1.48	1.14	.17	8:00 a. m.	.267	3.77	.26	93.8	.0203	2:45 a. m. (19)	
19 to 22			.05												
22	11:50 a. m.	4 38	.47	4.68	2.40	1.38	.10	12:00 m.	2.69	2.65	.04	19.6	.0042	8:50 p. m. (23)	32 50
22 to 29			0												
29	1:39 p. m.	41	.55	5.52	2.96	1.90	.80	2:00 p. m.	1.09	1.48	.02	20.9	.0045	5:40 p. m.	3 40
29 to 30			0												
Total			6.27												
July:															
1 to 4			.04												
4	9:45 p. m.	2 49	1.27	4.14	2.48	1.44	.45	9:50 p. m.	.850	1.69	.05	18.1	.0039	8:55 a. m. (5)	
5 to 7			0												
8	5:04 a. m.	2 8	1.65	4.37	2.84	1.54	.77	5:20 a. m.	1.21	5.55	.34	352	.0760	2:40 p. m.	
8 to 18			0												
18	2:50 a. m.	7 50	.67	.36	.30	.22	.09	3:00 a. m.	.946	1.50	.02	4.97	.0011	3:40 p. m.	12 40
19 to 20			0												
20	4:30 p. m.	1 0	.42	7.32	3.68	2.96	.42	(4)							
20 to 26			0												
26	5:06 a. m.	1 3	.93	3.96	2.56	1.44	.89	5:10 a. m.	.650	1.34	.04	27.0	.0058	7:00 a. m.	
26 to 29			0												
29	4:50 a. m.	4 35	.55	.86	.72	.52	.12	5:20 a. m.	.946	1.21	.02	3.25	.0007	4:40 a. m. (30)	
30 to 31			0												
Total			5.53												
August:															
1 to 8			.13												
8	6:11 a. m.	43	.43	3.60	1.52	.76	.60	6:20 a. m.	.500	.448	.007	2.49	.0005	12:50 p. m.	6 30
8 to 13			0												
13	12:53 p. m.	2 50	.92	2.64	1.80	.94	.32	1:00 p. m.	.177	.560	.02	22.2	.0048	5:10 p. m.	
13 to 31			.53												
Total			2.01												
September:															
1 to 29			.66												
29	8:54 p. m.	7 44	.60	.72	.41	.24	.08								
30			0												
Total			1.26												
October:															
1 to 10			0												
10	3:30 p. m.	3 10	.26	.48	.36	.26	.08								
10 to 25			.02												
25	12:17 a. m.	27 43	3.83	3.48	2.56	1.30	.14	12:20 a. m.	.017	.850	.15	82.2	.0178	10:26 a. m. (26)	
26 to 31			.03												
Total			4.14												
November:															
1 to 30			.57												
December:															
1 to 2			.01												
2	9:00 a. m.	4 21	.42	.84	.52	.32	.10	10:25 a. m.	.690	1.28	.02	3.14	.0007	7:00 a. m.	
2 to 13			.08												
13	1:30 a. m.	4 50	.31	.24	.16	.14	.06	1:40 a. m.	.560	.994	.01	1.94	.0004	3:00 p. m.	13 20
13 to 31			.40												
Total			1.22												
Year			36.92												

¹ If different from date in column 1, date is in parentheses after the time.⁴ No record.

TABLE 18.—Summary of rainfall and run-off, watershed 5, 1939

LOCATION: Latitude 40°24'23'', longitude 81°48'11''.

PHYSICAL CHARACTERISTICS:

Size.—Length of principal drainage, 4,900 feet (0.93 mile).

Area, 0.545 square mile (349 acres).

Shape factor.—0.625.

Slope.—Slope has not been determined. In general, valleys are narrow and have high gradients and steep slopes. Slopes range from 5 percent to over 30 percent with a large part of the area on the steeper slopes. The valley floor has much more storage capacity than other watersheds of similar size.

Soil.—Predominating soil is Muskingum loam, derived largely from sandstone and lighter in texture throughout the profile than the Muskingum silt loam. It is rather shallow and contains numerous small sandstone fragments. The un-weathered sandstone rock occurs at a depth of 18 to 30 inches.

Erosion conditions.—On the area not in woodland, 25 to 50 percent of the topsoil has been removed. There are occasional gullies, more than 100 feet apart, on 5 percent of the area (estimated). Landslips occur on approximately 1 percent of the area.

LAND USE:

Plan.—Mixed cover, improved practices.

MEASUREMENTS:

Precipitation.—Precipitation is measured at two recording rain gages, stations 1 and 8, and four nonrecording rain gages, stations 2, 3, 4, and 5. The maximum and average intensities are obtained from the recording gage that shows the greatest 15-minute intensity. The amount is obtained by Thiessen weight. Snowfall is measured by the rain gages supplemented by snow boards. Snow inventory is based on surveys and observations made on typical areas near project headquarters.

Run-off.—Run-off is measured by current-meter station with Columbus deep-notch weir control. The records of run-off are very good. The rating curve is well developed and there was almost no silt.

Ground-water levels.—The records from three observation wells indicate the fluctuation of the ground-water table below this watershed.

SUMMARY OF RECORDS, MARCH 1937 TO DECEMBER 1939:

Rainfall.—Average annual precipitation, 36.12 inches. Maximum annual precipitation, 38.48 inches, 1938.

Run-off.—Average annual run-off, 13.53 inches. Maximum annual run-off, 14.62 inches, 1938. Maximum rate of run-off, 0.164 inch per hour (57.6 second-feet), May 20, 1938. Minimum rate of run-off, 0.000 inch per hour (0.006 second-foot), September 2, 1939.

Date	Rainfall							Run-off							
	Time began	Duration	Total amount	Intensity				Time rise began	Rate at—		Total amount	Maximum rate		Time of maximum rate ¹	Period of rise
				Maximum for—			Average rate for duration of rainfall		Time rise began	Time run-off totaled		In.	Sec.-ft.		
				5-minute period	15-minute period	30-minute period									
		Hr. min.	In.	In. per hr.	In. per hr.	In. per hr.	In. per hr.		Sec.-ft.	Sec.-ft.	In.	Sec.-ft.	In. per hr.		Hr. min.
January:															
1 to 13			0.09												
13	1:30 a. m.	11 45	.46	0.12	0.08	0.06	0.04								
13 to 29			2.30												
29 ³	1:00 a. m.	25 4	1.96	1.32	1.00	.66	.08	6:00 a. m.	0.096	1.90	0.80	20.3	0.0577	3:30 a. m. (30)	21 30
30 to 31			0												
Total			2.81												
February:															
1 to 2			0												
2	1:50 a. m.	7 35	.39	.24	.16	.12	.05	1:50 a. m.	1.35	1.75	.14	3.14	.0089	9:00 a. m.	
2 to 9			2.35												
9	4:30 p. m.	5 54	.61	.72	.36	.24	.10	4:30 p. m.	.098	1.54	.32	7.56	.0215	12:40 a. m. (10)	
10 to 14			0												
14	8:30 p. m.	11 50	1.46	.48	.44	.40	.12	8:30 p. m.	.098	1.90	.47	23.1	.0656	2:40 a. m. (15)	6 10
15 to 19			0												
19 ³	3:50 a. m.	5 58	.60	.72	.44	.24	.10	3:50 a. m.	1.82	2.42	.49	8.90	.0253	2:50 a. m. (20)	
20 to 26			.31												
26	12:01 a. m.	10 10	2.76	.24	.20	.18	.07	2:00 a. m.	.908	2.42	.60	10.4	.0295	5:05 a. m. (28)	
27 to 28			0												
Total			4.48												
March:															
1 to 5			0												
5	12:50 a. m.	4 50	.32	.12	.12	.10	.07	1:20 a. m.	.122	1.41	.09	2.33	.0066	5:40 a. m.	4 20
5 to 11			0												
11	5:00 a. m.	15 12	1.83	1.20	.80	.48	.12	5:20 a. m.	.582	1.90	.91	19.5	.0554	7:10 a. m. (12)	
12 to 27			.17												
27	5:00 a. m.	9 20	.48	.12	.12	.12	.05	5:40 a. m.	.406	.484	.07	1.22	.0035	4:00 p. m.	10 20
27 to 29			0												
29	4:30 p. m.	10 0	.76	.36	.24	.20	.08	4:30 p. m.	.432	1.35	.24	6.93	.0197	9:30 a. m. (30)	17 0
30 to 31			0												
Total			3.56												
April:															
1 to 5			.01												
5	11:00 p. m.	10 10	.70	.24	.20	.20	.07	11:00 p. m.	.618	1.22	.12	3.25	.0092	8:40 a. m. (6)	9 40
6 to 9			.08												
9	11:20 p. m.	4 10	.30	.24	.12	.12	.07	11:20 p. m.	.864	1.28	.07	2.33	.0066	6:30 a. m. (10)	4 10
10	11:56 p. m.	3 0	.36	.48	.28	.16	.12	12:00 p. m.	1.16	1.61	.13	3.25	.0092	6:10 a. m. (11)	6 10
11 to 14			.05												

¹ If different from date in column 1, date of maximum rate is in parentheses after the time.

² Snow.

³ Snow on ground.

TABLE 18.—Summary of rainfall and run-off, watershed 5, 1939—Continued

Date	Rainfall							Run-off								
	Time began	Duration	Total amount	Intensity				Time rise began	Rate at—		Total amount	Maximum rate ¹		Time of maximum rate ¹	Period of rise	
				Maximum for—			Average rate for duration of rain-fall		Time rise began	Time run-off totaled		In.	Maximum rate ¹			
				5-minute period	15-minute period	30-minute period							Time rise began			Time run-off totaled
April—Con.		Hr. min.	In.	In. per hr.	In. per hr.	In. per hr.	In. per hr.		Sec.-ft.	Sec.-ft.	In.	Sec.-ft.	In. per hr.		Hr. min.	
14	5:48 p. m.	19 21	1.91	1.46	0.68	0.34	0.10	5:48 p. m.	1.11	2.70	1.22	13.3	0.0375	12:40 a. m. (18)		
15 to 30			.20													
Total			3.61													
May:																
1 to 8			.08													
8	9:00 p. m.	4 7	.44	.48	.36	.20	.11	9:20 p. m.	.204	3.12	.03	.582	.0016	1:00 p. m. (9)		
9 to 21			.06													
21	11:14 a. m.	1 21	.39	.84	.36	.22	.29	11:18 a. m.	.104	.152	.01	.235	.0007	4:40 p. m.	5 22	
22 to 28			0													
28	12:34 a. m.	9	.30	2.16	1.00	.50	2.00	12:34 a. m.	.056	.121	.006	.458	.0013	3:00 a. m.	2 26	
29 to 31			0													
Total			1.27													
June:																
1 to 3			.25													
3	8:50 a. m.	3 54	.20	.18	.16	.14	.05	9:00 a. m.	.077	.096	.005	.190	.0005	12:20 p. m.	3 20	
3 to 13			.48													
13	7:44 a. m.	4 56	.82	.48	.32	.30	.17	7:50 a. m.	.043	.112	.03	1.99	.0055	1:00 p. m.	5 10	
13 to 18			0													
18	7:30 a. m.	13 1	3.03	.84	.80	.70	.23	7:40 a. m.	.028	.406	.28	8.19	.0233	12:55 a. m. (19)		
19 to 22			.07													
22	3:23 p. m.	1 5	.83	4.68	2.40	1.38	.75	3:23 p. m.	.164	.618	.09	18.2	.0517	5:35 p. m.		
22 to 29			0													
29	1:39 p. m.	29	.88	3.96	2.88	1.74	1.82	1:40 p. m.	.104	1.16	.07	15.0	.0426	2:50 p. m.		
29 to 30			0													
Total			6.56													
July:																
1 to 4			0													
4	9:47 p. m.	1 43	.72	3.36	1.68	.92	.42	9:53 p. m.	.066	.164	.04	4.31	.0122	10:20 p. m.	27	
4 to 6			0													
6	4:12 a. m.	28	.06	.24	.12	.08	.13	4:12 a. m.	.131	.177	.007	.357	.0010	8:20 a. m.	4 8	
6 to 8			.08													
8	12:14 p. m.	1 16	.90	1.80	1.20	.66	.71	12:30 p. m.	.141	.235	.07	7.98	.0215	1:14 p. m.	44	
8 to 18			.12													
18	2:50 a. m.	7 58	.58	.24	.20	.16	.07	(4)								
18 to 26			0													
26	5:06 a. m.	1 1	.92	3.24	2.44	1.36	.92	5:10 a. m.	.022	.061	.04	5.62	.0160	6:37 a. m.		
26 to 29			0													
29	4:51 a. m.	2 57	.58	.48	.24	.16	.20	4:51 a. m.	.035	.061	.01	.267	.0007	7:00 p. m.		
29 to 31			0													
Total			3.96													
August:																
1 to 8			.05													
8	6:12 a. m.	37	.37	1.92	.72	.38	.60	6:15 a. m.	.025	.043	.003	.141	.0004	10:00 a. m.	3 45	
8 to 13			0													
13	1:03 p. m.	38	.69	3.60	1.76	.88	1.09	12:55 p. m.	.022	.052	.02	1.90	.0054	5:10 p. m.		
13 to 31			.22													
Total			1.33													
September:																
1 to 29			.27													
29	9:10 p. m.	7 9	.66	1.20	.40	.22	.09									
30			0													
Total			.93													
October:																
1 to 25			.28													
25	4:20 a. m.	18 29	2.12	2.04	1.36	.98	.11	7:00 a. m.	.011	.061	.03	1.22	.0035	11:18 a. m.		
26			0													
27	3:57 a. m.	8 51	1.16	1.56	1.04	.70	.13	4:45 a. m.	.061	.061	.06	3.14	.0089	6:45 a. m.		
27 to 31			0													
Total			3.56													
November:																
1 to 30			.52													
December:																
1 to 2			.29													
2	9:20 a. m.	3 49	.42	.48	.24	.12	.11	10:30 a. m.	.047	.121	.01	.432	.0012	1:20 p. m.	2 50	
2 to 13			.11													
13	1:50 a. m.	3 45	.32	.12	.12	.12	.09	1:50 a. m.	.061	.089	T	.204	.0006	9:05 a. m.	7 15	
13 to 31			.31													
Total			1.45													
Year			34.04													

¹ If different from date in column 1, date of maximum rate is in parentheses after the time.⁴ No record.

TABLE 19.—Summary of rainfall and run-off, watershed 10, 1939

LOCATION: Latitude 40°23'33", longitude 81°48'19".

PHYSICAL CHARACTERISTICS:

Size.—Length of principle drainage, 3,400 feet (0.644 mile).

Area, 0.191 square mile (122 acres).

Shape factor.—0.46.*Slope*.—Slope has not been determined. In general, valleys are narrow and have high gradients and steep slopes. Slopes range from 5 percent to over 30 percent with a large part of the area on the steeper slopes.*Soil*.—Predominating soil is Keene silt loam, an upland soil of residual origin derived largely from shale. The surface soil is brown to grayish brown, 6 to 8 inches in depth. The subsoil is reddish brown to yellowish brown just below the surface soil. The texture is silt loam grading into silty clay loam and then into heavy silty clay. Slight mottling begins at a depth of 12 to 24 inches, below which is a layer of heavy silty clay with gray predominating. Shale and sandstone fragments occur throughout the profile but are not so numerous as in the Coshocton or Muskingum soils. Drainage is fair.*Erosion conditions*.—On the area not in woodland, 25 to 50 percent of the topsoil has been removed by sheet erosion. There are occasional gullies, more than 100 feet apart, on 1 percent of the area (estimated).

LAND USE:

Plan.—Mixed cover, improved practices.

MEASUREMENTS:

Precipitation.—Precipitation is measured at one recording gage, station 14, and six nonrecording gages, stations 10, 11, 15, 20, 21, and 22. The amount is obtained by Thiessen weight. Snowfall is measured by the rain gages supplemented by snow boards. Snow inventory is based on surveys and observations made on typical areas near project headquarters.*Run-off*.—Run-off is measured by dual Parshall measuring flume consisting of the main flume having a 15-foot throat, and supplemental low-flow flume having a 1-foot throat. The records of run-off are very good. Records of low flow during summer months are supplemented by periodic volumetric measurements. During winter months the low-flow records contain some inaccuracies because of ice formations in the flumes. Laboratory ratings are used for the flumes.*Ground-water levels*.—The record from one observation well indicates the fluctuation of the ground-water tables.

SUMMARY OF RECORDS, AUGUST 1937 TO DECEMBER 1939:

Rainfall.—Average annual precipitation, 38.36 inches. Maximum annual precipitation, 39.91 inches, 1938.*Run-off*.—Average annual run-off, 9.33 inches. Maximum annual run-off, 10.22 inches, 1938. Maximum rate of run-off, 0.242 inch per hour (29.8 second-feet), July 8, 1939. Minimum rate of run-off, 0.00 inch per hour, September 1939.

Date	Rainfall							Run-off							
	Time began	Duration	Total amount	Intensity				Time rise began ¹	Rate at—		Total amount	Maximum rate		Time of maximum rate ¹	Period of rise
				Maximum for—			Average rate for duration of rainfall		Time rise began	Time run-off totaled		Maximum rate	Time of maximum rate ¹		
				5-minute period	15-minute period	30-minute period									
		Hr. min.	In.	In. per hr.	In. per hr.	In. per hr.	In. per hr.		Sec.-ft.	Sec.-ft.	In.	Sec.-ft.	In. per hr.		Hr. min.
January:															
1 to 13			0.09												
13	12:30 a. m.	12 22	.36	0.24	0.12	0.12	0.03								
13 to 29			.40												
29 ^a	1:30 a. m.	23 44	1.61	1.32	1.08	.72	.07	12:01 a. m. (30).	0.086	0.345	0.46	6.70	0.0545	2:44 a. m. (30)	2 43
30 to 31			0												
Total			2.46												
February:															
1 to 2			0												
2	2:00 a. m.	8 20	.49	.24	.16	.14	.06	2:00 a. m.	.179	.345	.15	1.35	.0110	2:00 p. m.	
2 to 9			.26												
9	4:30 p. m.	9 0	.61	.48	.28	.28	.07	8:40 p. m.	.179	.40	.16	1.93	.0157	12:10 p. m. (10)	
10 to 14			0												
14	8:30 p. m.	15 40	1.35	.36	.32	.32	.09	9:00 p. m.	.159	.51	.34	9.40	.0764	3:05 a. m. (15)	6 5
15 to 19			0												
19 ³	3:50 a. m.	4 51	.64	.96	.48	.26	.13	3:50 a. m.	.43	.54	.37	3.52	.0286	6:10 a. m.	2 20
20 to 26			.47												
26 ³	12:20 a. m.	6 20	.42	.12	.12	.10	.07	2:25 a. m.	.086	.58	.54	4.00	.0352	4:50 a. m. (28)	
26 to 28			0												
28	2:40 a. m.	2 14	.27	.36	.20	.18	.12								
Total			4.51												
March:															
1 to 5			0												
5	12:50 a. m.	4 10	.28	.24	.16	.14	.07	1:00 a. m.	.201	.319	.05	.58	.0047	5:15 a. m.	4 15
5 to 11			.05												
11	5:10 a. m.	19 42	1.55	1.20	.72	.44	.08	5:20 a. m.	.120	.54	.73	7.58	.0616	6:20 p. m. (12)	
12 to 27			.22												
27	5:00 a. m.	9 19	.25	.14	.12	.10	.03	5:30 a. m.	.086	.159	.04	.319	.0026	4:00 p. m.	10 30
27 to 29			0												
29	5:00 p. m.	14 40	.87	.36	.28	.24	.06	4:20 p. m.	.086	.37	.19	2.85	.0232	9:30 a. m (30)	
30 to 31			0												
Total			3.22												
April:															
1 to 5			0												
5	11:00 p. m.	9 10	.68	.24	.20	.18	.07	12:01 a. m. (6).	.12	.29	.10	1.11	.0090	8:20 a. m. (6)	8 19
6 to 9			.10												
9	11:20 p. m.	4 38	.29	.24	.12	.12	.06	11:40 p. m.	.179	.345	.04	.54	.0044	3:20 a. m. (10)	3 40
10			0												

¹ If different from date in column 1, date is in parentheses after the time.² Snow.³ Snow on ground.

TABLE 19.—Summary of rainfall and run-off, from watershed 10, 1939—Continued

Date	Rainfall							Run-off							
	Time began	Duration	Total amount	Intensity				Time rise began ¹	Rate at—		Total amount	Maximum rate		Time of maximum rate ¹	Period of rise
				Maximum for—			Average rate for duration of rain-fall		Time rise began	Time run-off totaled		In.	Sec.-ft.		
				5-minute period	15-minute period	30-minute period									
April—Con.		<i>Hr. min.</i>	<i>In.</i>	<i>In. per hr.</i>	<i>In. per hr.</i>	<i>In. per hr.</i>	<i>In. per hr.</i>		<i>Sec.-ft.</i>	<i>Sec.-ft.</i>	<i>In.</i>	<i>Sec.-ft.</i>	<i>In. per hr.</i>		<i>Hr. min.</i>
10.....	11:50 p. m.	4 49	0.35	0.48	0.24	0.14	0.07	11:50 p. m.	0.246	0.40	0.08	0.84	0.0068	5:40 a. m. (11)	5 50
11 to 14.....			.05												
14.....	6:00 p. m.	19 6	1.90	1.44	.64	.32	.10	6:00 p. m.	.223	.49	1.06	9.40	.0764	4:50 a. m. (16)	
14 to 30.....			.19												
Total.....			3.56												
May:															
1 to 8.....			.08												
8.....	9:00 p. m.	2 31	.63	1.08	.44	.22	.25	4:00 a. m. (9)	.055	.086	.02	.61	.0050	2:55 p. m. (9)	
9 to 28.....			.35												
28.....	12:34 a. m.	10	.41	2.64	1.64	.82	2.46	12:35 a. m.	.019	.030	.002	.270	.0020	12:37 a. m.	2
28 to 31.....			0												
Total.....			1.47												
June:															
1 to 13.....			1.01												
13.....	7:50 a. m.	4 10	.77	.60	.36	.30	.18	8:40 a. m.	.019	.030	.008	.319	.0026	12:15 p. m.	3 35
13 to 18.....			0												
18.....	7:40 a. m.	14 28	2.82	1.08	.92	.80	.20	8:50 a. m.	.030	.139	.18	2.28	.0185	4:35 a. m. (19)	
19 to 22.....			0												
22.....	2:50 p. m.	1 39	.44	2.64	.88	.58	.27	2:50 p. m.	.030	.070	.009	.27	.0020	5:00 p. m.	2 10
22 to 29.....			0												
29.....	1:42 p. m.	30	.64	5.28	2.36	1.64	1.28	1:45 p. m.	.055	.086	.008	.61	.0050	2:18 p. m.	
29 to 30.....			0												
Total.....			5.68												
July:															
1 to 4.....			0												
4.....	9:50 p. m.	1 25	.73	3.00	2.12	1.20	.51	9:54 p. m.	.070	.086	.007	.51	.0041	10:22 p. m.	28
4 to 6.....			0												
6.....	4:09 a. m.	1 11	.38	2.14	.84	.42	.32	4:40 a. m.	.070	.086	.01	.80	.0065	7:45 p. m.	
6 to 8.....			0												
8.....	5:10 a. m.	1 36	1.60	4.68	2.76	1.50	1.00	7:40 a. m.	.086	.139	.16	29.8	.2422	1:07 p. m.	
8 to 18.....			0												
18.....	2:50 a. m.	4 30	.36	.24	.16	.14	.08								
18.....	9:50 a. m.	1 50	.36	.36	.32	.22	.20								
18 to 26.....			.04												
26.....	5:06 a. m.	47	1.11	3.36	2.36	1.40	1.42	5:07 a. m.	.019	.042	.03	2.08	.0169	5:47 a. m.	
26 to 29.....			0												
29.....	4:50 a. m.	2 20	.35	.60	.32	.20	.15								
29 to 31.....			.21												
Total.....			5.14												
August:															
1 to 8.....			.04												
8.....	6:11 a. m.	47	.51	2.40	.92	.46	.65	6:19 a. m.	.010	.010	.002	.246	.0020	6:38 a. m.	19
8 to 13.....			0												
13.....	1:01 p. m.	59	1.37	3.72	1.68	.98	1.39	1:08 p. m.	.042	.042	.05	2.90	.0236	2:46 p. m.	
13 to 29.....			.15												
29.....	3:35 p. m.	12	.50	3.96	2.00	1.00	2.50								
29 to 31.....			0												
Total.....			2.57												
September:															
1 to 30.....			.79												
30.....	6:50 a. m.	3 22	.35	.36	.16	.12	.10								
30.....			.07												
Total.....			1.21												
October:															
1 to 10.....			0												
10.....	4:30 p. m.	2 30	.25	.24	.12	.10	.10								
10 to 25.....			.05												
25.....	4:20 a. m.	13 16	2.73	3.12	1.48	.74	.21	2:00 p. m.	0	.019	.06	10.3	.0837	8:56 a. m. (26)	
26.....			0												
27.....	3:50 a. m.	12 11	1.48	1.20	1.00	.80	.12	4:00 a. m.	.019	.055	.06	1.52	.0124	5:15 a. m.	1 15
27 to 31.....			0												
Total.....			5.51												
November:															
1 to 30.....			.54												
December:															
1 to 2.....			0												
2.....	9:00 a. m.	3 35	.39	.96	.48	.30	.11	10:35 a. m.	0	.019	.003	.139	.0011	11:55 a. m.	1 20
2 to 13.....			.39												
13.....	1:55 a. m.	3 48	.33	.36	.16	.14	.09								
13 to 31.....			.33												
Total.....			1.44												
Year.....			37.31												

¹ If different from date in column 1, date is in parentheses after the time.

TABLE 20.—Summary of rainfall and run-off, watershed 11, 1939

LOCATION: Latitude 40°23'21'', longitude 81°48'58''.

PHYSICAL CHARACTERISTICS:

Size.—Length of principal drainage, 7,200 feet (1.36 miles).

Area, 0.456 square miles (292 acres).

Shape factor.—0.25.*Slope*.—Slope has not been determined. In general, valleys are narrow and have high gradients and steep slopes. Slopes range from 5 percent to over 30 percent with a large part of the area on the steeper slopes.*Soil*.—Predominating soil is Keene silt loam, an upland soil of residual origin derived largely from shale. The surface soil is brown to grayish brown, 6 to 8 inches in depth. The subsoil is reddish brown to yellowish brown just below the surface soil. The texture is silt loam grading into silty clay loam and then into heavy silty clay. Slight mottling begins at a depth of 12 to 24 inches, below which is a layer of heavy silty clay with gray predominating. Shale and sandstone fragments occur throughout the profile but are not so numerous as in the Coshocton or Muskingum soils. Drainage is fair.*Erosion conditions*.—On the area not in woodland, 50 to 75 percent of topsoil has been removed by sheet erosion. There are occasional gullies, more than 100 feet apart, on 5 percent of the area (estimated), and frequent gullies, less than 100 feet apart, on 3 acres (estimated). Landslips occur on 3 percent of the area.*Special features*.—Woodland covers 30 percent of this area, which is more than of most watersheds of similar size.

LAND USE:

Plan.—Mixed cover, conservation practices.

MEASUREMENTS:

Precipitation.—Precipitation is measured at one recording rain gage, station 14, and seven nonrecording gages, stations 10, 11, 13, 19, 20, 21, and 25. The amount is obtained by Thiessen weight. Snowfall is measured by the rain gages supplemented by snow boards. Snow inventory is based on surveys and observations made on typical areas near project headquarters.*Run-off*.—Run-off is measured by current-meter station with Columbus deep-notch weir control. The records of run-off are good. The rating curve is fairly well developed. Records of low flow at this station are occasionally inaccurate because of silt.

SUMMARY OF RECORDS, MARCH 1937 TO DECEMBER 1939:

Rainfall.—Average annual precipitation, 37.94 inches. Maximum annual precipitation, 39.70 inches, 1938.*Run-off*.—Average annual run-off, 12.34 inches. Maximum annual run-off 13.71 inches, 1938. Maximum rate of run-off, 0.186 inch per hour (54.6 second-feet), August 4, 1938. Minimum rate of run-off, 0.00 inch per hour, September 16, 1939.

Date	Rainfall							Run-off							
	Time began	Duration	Total amount	Intensity				Time rise began	Rate at—		Total amount	Maximum rate		Time of maximum rate ¹	Period of rise
				Maximum for—			Average rate for duration of rain-fall		Time rise began	Time run-off totaled					
				5-minute period	15-minute period	30-minute period									
January:		Hr. min.	In.	In. per hr.	In. per hr.	In. per hr.	In. per hr.		Sec.-ft.	Sec.-ft.	In.	Sec.-ft.	In. per hr.		Hr. min.
1 to 13			0.09												
13	12:30 a. m.	11 22	.58	0.24	0.12	0.12	0.05								
13 to 29			2.40												
29 ³	1:30 a. m.	23 4	1.74	1.32	1.08	.72	.08	4:20 a. m.	0.052	2.03	0.70	21.1	0.0716	5:00 p. m. (30)	
30 to 31			0												
Total			2.81												
February:															
1 to 2			0												
2	2:00 a. m.	8 0	.42	.24	.16	.14	.05	2:20 a. m.	.896	1.46	.23	3.40	.0115	2:20 p. m.	
2 to 9			2.36				.07	9:00 p. m.	.692	1.61	.21	5.18	.0176	12:25 p. m. (10)	
9	4:30 p. m.	9 0	.63	.48	.28	.28	.09								
10 to 14			0												
14	8:20 p. m.	14 40	1.37	.36	.32	.32	.09	8:20 p. m.	.562	1.77	.41	21.1	.0716	3:10 a. m. (15)	18 50
15 to 19			0												
19 ³	3:50 a. m.	4 51	.63	.96	.48	.26	.13	3:50 a. m.	1.26	1.94	.48	8.10	.0275	6:25 a. m.	2 35
20 to 26			.46												
26	12:20 a. m.	8 34	2.45	.36	.20	.18	.05	2:20 a. m.	.562	1.54	.65	7.58	.0257	5:15 a. m. (28)	
26 to 28			.25												
Total			4.57												
March:															
1 to 5			0												
5	12:50 a. m.	6 0	.33	.24	.16	.14	.06	12:50 a. m.	.620	.764	.10	1.39	.0047	5:00 a. m.	4 30
5 to 11			0												
11	5:10 a. m.	18 42	1.66	1.20	.72	.44	.09	5:20 a. m.	.340	1.77	.84	17.2	.0584	7:07 a. m. (12)	
12 to 27			.29												
27	5:00 a. m.	9 19	.33	.14	.12	.10	.04	6:00 a. m.	.235	.322	.05	.692	.0024	4:00 p. m.	
27 to 29			0												
29	5:00 p. m.	16 10	.83	.36	.28	.24	.05	4:00 p. m.	.285	1.26	.23	6.19	.0210	10:00 a. m. (30)	18 0
30 to 31			0												
Total			3.44												
April:															
1 to 5			.04												
5	11:00 p. m.	9 10	.69	.24	.20	.18	.08	11:00 p. m.	.405	.944	.10	2.22	.0075	8:45 a. m. (6)	9 45

¹ If different from date in column 1, date of maximum rate is in parentheses after the time.² Snow.³ Snow on ground

TABLE 20.—Summary of rainfall and run-off, watershed 11, 1939—Continued

Date	Rainfall							Run-off							
	Time began	Duration	Total amount	Intensity				Time rise began	Rate at—		Total amount	Maximum rate		Time of maximum rate ¹	Period or rise
				Maximum for—			Average rate for duration of rain-fall		Time rise began	Time run-off totaled					
				5-minute period	15-minute period	30-minute period									
April—Con.		Hr. min.	In.	In. per hr.	In. per hr.	In. per hr.		Sec.-ft.	Sec.-ft.	In.	Sec.-ft.	In. per hr.		Hr. min.	
6 to 9			0.10												
9	11:20 p. m.	4 38	.28	0.24	0.12	0.12	0.06	11:40 p. m.	0.591	1.04	0.05	1.32	0.0045	3:40 a. m. (10)	4 0
10	11:57 p. m.	4 42	.34	.48	.24	.14	.07	11:57 p. m.	.896	1.26	.12	2.03	.0069	6:40 a. m. (11)	6 43
11 to 14			.05												
14	6:00 p. m.	19 6	1.90	1.44	.64	.32	.10	6:00 p. m.	.764	1.68	1.21	17.2	.0584	5:35 a. m. (18)	
15 to 30			.19												
Total			3.59												
May:															
1 to 8			.14												
8	9:00 p. m.	2 29	.55	1.08	.44	.22	.22	9:00 p. m.	.152	.267	.03	.800	.0027	4:05 p. m. (9)	
9 to 28			.45												
28	12:34 a. m.	10	.34	2.64	1.28	.64	2.04	12:34 a. m.	.039	.071	.005	.475	.0016	2:10 a. m.	1 42
28 to 31			0												
Total			1.48												
June:															
1 to 13			1.01												
13	7:50 a. m.	4 10	.80	.60	.36	.30	.19	8:00 a. m.	.025	.047	.02	1.21	.0041	12:30 p. m.	4 30
13 to 18			0												
18	7:40 a. m.	13 47	2.82	1.08	.92	.80	.20	7:40 a. m.	.022	.219	.19	5.38	.0183	4:40 p. m. (19)	
19 to 22			.07												
22	3:24 p. m.	1 5	.43	2.64	.88	.58	.39	3:25 p. m.	.112	.177	.009	.944	.0032	6:00 p. m.	2 35
22 to 29			0												
29	1:42 p. m.	30	.68	5.28	2.36	1.64	1.36	1:50 p. m.	.043	.121	.01	3.00	.0102	2:50 p. m.	1 0
29 to 30			0												
Total			5.81												
July:															
1 to 4			0												
4	9:50 p. m.	1 25	.73	3.00	2.12	1.20	.52	9:50 p. m.	.028	.056	.02	2.63	.0089	11:00 p. m.	1 10
4 to 6			0												
6	4:09 a. m.	1 11	.38	2.14	.84	.42	.32	4:10 a. m.	.056	.089	.01	.692	.0024	8:25 a. m.	
6 to 8			0												
8	5:10 a. m.	1 36	1.30	4.68	2.76	1.50	.81	5:10 a. m.	.052	.267	.17	34.0	.1155	1:28 p. m.	
8 to 18			.11												
18	2:50 a. m.	6 20	.73	.36	.30	.22	.12	2:50 a. m.	.047	.066	.01	.504	.0017	12:50 p. m.	
18 to 26			.04												
26	5:06 a. m.	46	1.04	3.36	2.36	1.40	1.36	5:06 a. m.	.028	.089	.03	3.71	.0126	6:10 a. m.	
26 to 29			.21												
29	4:50 a. m.	2 52	.44	.88	.53	.32	.15	5:00 a. m.	.039	.056	.01	.340	.0012	7:40 a. m.	
30 to 31			0												
Total			4.98												
August:															
1 to 8			.20												
8	6:11 a. m.	47	.34	2.40	.92	.46	.43	6:11 a. m.	.025	.028	.004	.381	.0013	8:10 p. m.	
8 to 13			0												
13	1:01 p. m.	59	1.32	3.72	1.68	.98	1.34	1:10 p. m.	.009	.061	.04	4.31	.0146	3:40 p. m.	
13 to 29			.15												
29	3:35 p. m.	12	.50	3.96	2.00	1.00	2.50	3:35 p. m.	.002	.019	.005	1.26	.0043	5:00 p. m.	
29 to 31			0												
Total			2.51												
September:															
1 to 30			1.29												
October:															
1 to 25			.26												
25	12:22 a. m.	16 32	2.56	3.12	1.48	.74	.15	12:25 a. m.	.006	.077	.10	23.4	.0795	9:18 a. m. (26)	
26			0												
27	3:50 a. m.	8 50	1.39	1.20	1.00	.80	.16	3:50 a. m.	.061	.152	.08	7.06	.0240	5:58 a. m.	2 8
27 to 31			0												
Total			4.21												
November:															
1 to 30			.54												
December:															
1 to 2			.30												
2	9:00 a. m.	3 35	.35	.96	.48	.30	.10	10:40 a. m.	.043	.096	.009	.340	.0012	1:30 p. m.	
2 to 13			.09												
13	1:55 a. m.	3 48	.30	.36	.16	.14	.08	2:00 a. m.	.035	.089	.005	.152	.0005	7:00 a. m.	5 0
13 to 31			.34												
Total			1.38												
Year			36.61												

¹ If different from date in column 1, date of maximum rate is in parentheses after the time.

TABLE 21.—Summary of rainfall and run-off, watershed 13, 1939

LOCATION: Latitude 40°22'39", longitude 81°48'35".

PHYSICAL CHARACTERISTICS:

Size.—Length of principal drainage, 6,200 feet (1.175 miles).

Area, 0.69 square mile (439 acres).

Shape factor.—0.50.*Slope*.—Slope has not been determined. In general, valleys are narrow and have high gradients and steep slopes. Slopes range from 5 percent to over 30 percent with a large part of the area on the steeper slope.*Soil*.—Predominating soil is Keene silt loam, an upland soil of residual origin derived largely from shale. The surface soil is brown to grayish brown, 6 to 8 inches in depth. The subsoil is reddish brown to yellowish brown just below the surface soil. The texture is silt loam grading into silty clay loam and then into heavy silty clay. Slight mottling begins at a depth of 12 to 24 inches, below which is a layer of heavy silty clay with gray predominating. Shale and sandstone fragments occur throughout the profile but are not so numerous as in the Coshocton or Muskingum soils. Drainage is fair. The slopes of this watershed are considerably steeper than those of other watersheds of similar size in the area.*Erosion conditions*.—On the area not in woodland, 50 to 75 percent of the topsoil has been removed by sheet erosion. There are occasional gullies, more than 100 feet apart, on 5 percent of the area (estimated), and frequent gullies, less than 100 feet apart, on 10 acres (estimated). Landslips occur on 10 percent of the area.*Special features*.—Woodland covers 45 percent of the drainage area of this watershed, which is much more than of other watersheds of similar size.

LAND USE:

Plan.—Mixed cover, conservation practices.

MEASUREMENTS:

Precipitation.—Precipitation is measured at five recording rain gages, stations 44, 100, 101, 102, and 103, and nine recording gages, stations 32, 33, 34, 36, 45, 49, 50, 51, and 55. The maximum and average intensities are obtained from the recording gage that shows the greatest 15-minute intensity. The amount is obtained by Thiessen average. Snowfall is measured by the rain gages supplemented by snow boards. Snow inventory is based on surveys and observations made on typical areas near project headquarters.*Run-off*.—Run-off is measured by current-meter station with Columbus deep-notch weir control. The records of run-off are only fair because of frequent clogging of intakes with silt during storm-flow recessions. The rating curve is fairly well developed.*Ground-water levels*.—The records from three observation wells indicate the fluctuation of the ground-water tables.*Changes during year*.—In July 1939 an extension of the intake pipe was made downstream into the pool above the deep-notch weir to secure additional freedom from silt deposits.

SUMMARY OF RECORDS, AUGUST 1937 TO DECEMBER 1939:

Rainfall.—Average annual precipitation, 37.72 inches. Maximum annual precipitation, 37.88 inches, 1939.*Run-off*.—Average annual run-off, 12.39 inches. Maximum annual run-off, 12.77 inches, 1939. Maximum rate of run-off, 0.230 inch per hour (102 second-feet), July 8, 1939. Minimum rate of run-off, 0.00 inch per hour, September 9, 1938, and September 18–29, 1939.

Date	Rainfall							Run-off							
	Time began	Duration	Total amount	Intensity				Time rise began	Rate at—		Total amount	Maximum rate		Time of maximum rate ¹	Period of rise
				Maximum for—			Average rate for duration of rain-fall		Time rise began	Time run-off totaled					
				5-minute period	15-minute period	30-minute period									
		Hr. min.	In.	In. per hr.	In. per hr.	In. per hr.	In. per hr.		Sec.-ft.	Sec.-ft.	In.	Sec.-ft.	In. per hr.		Hr. min.
January:															
1 to 12			0.11												
12	12:00 p. m.	10 0	³ .37	0.06	0.06	0.06	0.04								
13 to 29			.33												
29 ²	1:00 a. m.	22 15	1.42	.36	.32	.24	.06	6:00 a. m.	0.141	3.39	0.58	23.2	0.0524	3:30 a. m. (30)	21 30
30 to 31			0												
Total			2.23												
February:															
1 to 2			0												
2	2:00 a. m.	8 35	.41	.24	.16	.12	.05	2:00 a. m.	.930	2.13	.23	4.76	.0108	5:20 p. m.	
2 to 9			² .38												
9	4:30 p. m.	7 16	.54	.36	.28	.22	.07	4:30 p. m.	.746	1.63	.22	5.66	.0128	12:20 p. m. (10)	
10 to 14			0												
14	8:20 p. m.	11 20	1.24	.60	.44	.40	.11	8:20 a. m.	.712	2.13	.47	33.5	.0757	3:10 a. m. (15)	18 50
15 to 19			0												
19 ³	3:50 a. m.	4 6	.60	.84	.32	.24	.15	3:50 a. m.	1.55	1.79	.45	9.66	.0218	2:30 a. m. (20)	
20			0												
21	9:30 a. m.	6 20	.36	.24	.12	.10	.06								
21 to 26			0												
26	12:01 a. m.	9 5	³ .68	.24	.24	.18	.08	2:00 a. m.	.678	2.55	.57	9.98	.0225	5:40 a. m. (28)	
27 to 28			0												
Total			.421												
March:															
1 to 5			0												
5	12:30 a. m.	6 30	.26	.12	.12	.08	.04	(⁴)							
5 to 11			0												
11	5:10 a. m.	16 20	1.79	1.08	.60	.56	.11	5:20 a. m.	.583	3.39	.07	45.3	.1023	6:35 a. m. (12)	
12 to 27			.37												
27	5:00 a. m.	9 20	.40	.24	.12	.10	.04								
27 to 29			0												
29	4:00 p. m.	13 20	.81	.36	.28	.22	.06	(⁴)							
30 to 31			0												
Total			3.63												
April:															
1 to 5			.05												
5	11:00 p. m.	10 40	.67	.24	.21	.20	.06	11:00 p. m.	.583	1.55	.13	4.27	.0096	9:40 a. m. (6)	10 40

¹ If different from date in column 1, date of maximum rate is in parentheses after the time.

Snow.

³ Snow on ground.⁴ No record.

TABLE 21.—Summary of rainfall and run-off, watershed 13, 1939—Continued

Date	Rainfall							Run-off							
	Time began	Duration	Total amount	Intensity				Time rise began	Rate at—		Total amount	Maximum rate		Time of maximum rate ¹	Period of rise
				Maximum for—			Average rate for duration of rain-fall		Time rise began	Time run-off totaled		Maximum rate	Time of maximum rate ¹		
				5-minute period	15-minute period	30-minute period									
		Hr. min.	In. per hr.	In. per hr.	In. per hr.	In. per hr.		Sec.-ft.	Sec.-ft.	In.	Sec.-ft.	In. per hr.		Hr. min.	
April—Con.															
6 to 9			0.16												
9	11:00 p. m.	7 4	.61	0.60	0.24	0.12	0.09	11:40 p. m.	0.930	1.79	0.20	3.01	0.0068	5:40 a. m. (11)	
11 to 14			0												
14	6:00 p. m.	20 56	2.26	3.72	1.28	.64	.11	6:00 p. m.	.980	2.13	1.57	34.2	.0773	5:51 a. m. (18)	
15 to 30			.16												
Total			3.91												
May:			0												
1 to 8			.69	2.10	.88	.44	.22	9:00 p. m.	.204	.428	.03	1.09	.0025	3:55 p. m. (9)	
8	9:00 p. m.	3 6	.05												
9 to 21			.35	1.20	.88	.48	.30	3:09 p. m.	.089	.190	.009	.555	.0012	12:45 a. m. (22)	
21	3:09 p. m.	1 10	0												
22 to 28			.32	3.00	1.36	.68	1.60	12:32 a. m.	.031	.096	.005	.555	.0012	1:00 a. m.	
28	12:32 a. m.	12	.01											28	
28 to 31															
Total			1.42												
June:			.17												
1 to 3			.22	.36	.28	.18	.12	8:40 a. m.	.047	.089	.003	.219	.0005	11:45 a. m.	
3	8:40 a. m.	1 50	.50											3 5	
3 to 10			.77	2.64	1.36	.74	.84	12:40 p. m.	.043	.077	.02	2.13	.0048	1:32 p. m.	
10	12:30 p. m.	55	0												
10 to 13			.83	.48	.42	.36	.19	7:40 a. m.	.039	.141	.02	2.89	.0065	12:35 p. m.	
13	7:40 a. m.	4 25	0											455	
13 to 18			2.82	.72	.72	.64	.18	7:30 a. m.	.019	.780	.50	18.6	.0420	1:40 a. m. (19)	
18	7:30 a. m.	15 19	0												
19 to 22			.44	1.20	.52	.30	.36	12:35 p. m.	.267	.450	.02	1.40	.0032	5:20 p. m.	
22	11:52 a. m.	1 13	0												
22 to 29			.45	2.04	1.04	.78	.82	1:39 p. m.	.077	.219	.009	2.04	.0046	2:40 p. m.	
29	1:38 p. m.	33	0												
29 to 30															
Total			6.20												
July:			.06												
1 to 4			.62	3.96	2.12	1.26	.41	(4)							
4	9:51 p. m.	1 29	0												
4 to 6			.76	1.92	1.32	.68	.74	4:10 a. m.	.083	.235	.03	8.04	.0182	7:22 a. m.	
6	4:10 a. m.	1 2	0												
6 to 8			2.34	3.36	2.24	1.40	.35	5:04 a. m.	.089	1.33	.85	102	.2304	1:12 p. m.	
8	5:04 a. m.	6 38	0												
8 to 18			.61	.36	.24	.18	.09	2:50 a. m.	.096	.177	.02	1.03	.0023	12:05 p. m.	
18	2:50 a. m.	7 00	0												
18 to 20			.50	2.16	.92	.74	.64	4:33 p. m.	.083	.177	.02	6.10	.0138	5:23 p. m.	
20	4:24 p. m.	47	0											50	
20 to 26			.63	3.72	2.08	1.14	.86	5:07 a. m.	.056	.286	.02	3.53	.0080	5:32 a. m.	
26	5:01 a. m.	44	.34	3.24	1.36	.68	2.04	9:50 p. m.	.152	.235	.02	5.88	.0133	10:10 p. m.	
26	9:50 p. m.	10	0											20	
26 to 29			.61	.84	.48	.46	.15	5:00 a. m.	.083	.131	.02	.780	.0018	2:40 a. m. (30)	
29	5:00 a. m.	3 58	0												
30 to 31															
Total			6.47												
August:			.29												
1 to 8			.31	2.40	.84	.42	.62	6:11 a. m.	.039	.056	.004	.323	.0007	7:20 a. m.	
8	6:11 a. m.	30	0												
8 to 13			.60	3.96	1.68	.84	.31	1:00 p. m.	.013	.066	.005	.61	.0014	1:21 p. m.	
13	1:00 p. m.	1 57	.55											21	
13 to 31															
Total			1.75												
September:			.66												
1 to 29			.68	.30	.24	.18	.06								
29	9:00 p. m.	10 30	0												
30															
Total			1.34												
October:			0												
1 to 10			.30	.48	.48	.32	.11								
10	3:30 p. m.	2 50	.02												
10 to 25			2.28	3.48	2.56	1.30	.11	12:20 a. m.	.001	.152	.03	13.0	.0294	9:06 a. m. (26)	
25	12:20 a. m.	19 54	0												
26			1.72	1.56	1.00	.84	.19	4:00 a. m.	.077	.267	.08	7.79	.0176	5:30 a. m.	
27	4:00 a. m.	8 51	.01											1 30	
27 to 31															
Total			4.33												
November:			.56												
1 to 30			.23												
1			.45	.84	.48	.30	.12	9:40 a. m.	.052	.204	.01	.428	.0010	12:40 p. m.	
2	9:40 a. m.	3 51	.20												
2 to 13			.33	.18	.14	.12	.08	1:54 a. m.	.052	.141	.008	.235	.0005	6:40 a. m.	
13	1:54 a. m.	4 6	.41											4 46	
13 to 31															
Total			1.62												
Year			37.67												

¹If different from date in column 1, date of maximum rate is in parentheses after the time.

* No record.

TABLE 22.—Summary of rainfall and run-off, watershed 20, 1939

LOCATION: Latitude 40°22'10", longitude 81°49'53".

PHYSICAL CHARACTERISTICS:

Size.—Length of principal drainage, 7,400 feet (1.40 miles).*Area* 0.583 square mile (373 acres).*Shape factor*.—0.30.*Slope*.—Slope has not been determined. In general, valleys are narrow and have high gradients and steep slopes. Slopes range from 5 percent to over 30 percent with a large part of the area on the steeper slopes.*Soil*.—Predominating soil is Keene silt loam, an upland soil of residual origin derived largely from shale. The surface soil is brown to grayish brown, 6 to 8 inches in depth. The subsoil is reddish brown to yellowish brown just below the surface soil. The texture is silt loam grading into silty clay loam and then into heavy silty clay. Slight mottling begins at a depth of 12 to 24 inches, below which appears a layer of heavy silty clay with gray predominating. Shale and sandstone fragments occur throughout the profile but are not so numerous as in the Coshocton or Muskingum soils. Drainage is fair.*Erosion conditions*.—On the area not in woodland, 50 to 75 percent of the topsoil has been removed by sheet erosion. There are occasional gullies, more than 100 feet apart, on 5 percent of the area (estimated), and frequent gullies, less than 100 feet apart, on 10 acres (estimated). Landslips occur on 10 percent of the area.*Special features*.—Woodland covers 19 percent of the area, which is less than the average (25 percent) for Mill Creek Basin.

LAND USE:

Plan.—Mixed cover, improved practices.

MEASUREMENTS:

Precipitation.—Precipitation is measured at 2 recording rain gages, stations 54 and 102, and 10 nonrecording gages, stations 48, 49, 50, 51, 53, 55, 57, 58, 59, and 105. The maximum and average intensities are obtained from the recording gage that shows the greatest 15-minute intensity. The amount is obtained by Thiessen weight. Snowfall is measured by the rain gages supplemented by snow boards. Snow inventory is based on surveys and observations made on typical areas near project headquarters.*Run-off*.—Run-off is measured by current-meter station with Columbus deep-notch weir control. Records of run-off are only fair. The rating curve is not well established and recession curves are occasionally inaccurate because of clogging of intake with silt.*Ground-water levels*.—The records from six observation wells indicate the fluctuation of the ground-water table.

SUMMARY OF RECORDS, 1937 TO DECEMBER 1939:

Rainfall.—Average annual precipitation, 37.70 inches. Maximum annual precipitation, 38.66 inches, 1938.*Run-off*.—Average annual run-off, 10.92 inches. Maximum annual run-off, 11.50 inches, 1938. Maximum rate of run-off, 0.300 inch per hour (113 second-feet) August 4, 1938. Minimum rate of run-off, 0.00 inch per hour, September 18, 25, 26, 1939.

Date	Rainfall							Run-off							
	Time began	Duration	Total amount	Intensity				Time rise began ¹	Rate at		Total amount	Maximum rate		Time of maximum rate ¹	Period of rise
				Maximum for—			Average rate for duration of rainfall		Time rise began	Time run-off totaled		In.	Sec. ft.		
				5-minute period	15-minute period	30-minute period									
		Hr. min.	In.	In. per hr.	In. per hr.	In. per hr.	In. per hr.		Sec. ft.	Sec. ft.	In.	Sec. ft.	In. per hr.		Hr. min.
January:															
1 to 13			0.04												
13	12:05 a. m.	12 55	.60	0.24	0.16	0.14	0.05								
13-29			2.32												
29 ³	2:00 a. m.	23 30	1.53	.48	.36	.34	.06	7:15 a. m.	0.077	1.19	0.70	35.8	0.0952	3:30 a. m. (30)	20 15
30 to 31			0												
Total			2.49												
February:															
1 to 2			0												
2	2:00 a. m.	7 56	.38	.24	.12	.10	.05	2:00 a. m.	.654	1.19	.18	4.81	.0128	2:30 p. m.	
2 to 9			2.33												
9	4:30 p. m.	6 46	.58	.60	.32	.17	.09	4:30 p. m.	.618	.976	.24	9.90	.0263	12:35 p. m. (10)	
10 to 14			0												
14	8:20 p. m.	14 10	1.22	.36	.32	.30	.09	8:40 p. m.	.529	1.19	.49	45.0	.1197	3:10 a. m. (15)	6 30
15 to 19			0												
19 ³	3:55 a. m.	5 8	.60	.72	.32	.22	.12	3:55 a. m.	1.08	1.24	.43	18.2	.0484	2:30 a. m. (20)	
20 to 26			2.36												
26 ³	12:01 a. m.	9 21	.76	.36	.28	.26	.08	1:00 a. m.	.500	1.19	.59	18.8	.0500	5:00 a. m. (28)	
26 to 28			0												
Total			4.23												
March:															
1 to 5			0												
5	12:50 a. m.	5 20	.31	.12	.12	.12	.06	12:30 a. m.	.559	.764	.04	1.58	.0042	5:20 a. m.	4 50
5 to 11			0												
11	5:14 a. m.	17 52	1.82	.96	.52	.38	.10	5:00 a. m.	.378	1.30	.96	39.6	.1053	6:35 p. m. (12)	
12 to 27			.30												
27	5:00 a. m.	8 50	.37	.12	.12	.12	.04	(4)							
27 to 29			0												
29	4:30 p. m.	10 25	.81	.36	.28	.24	.08	4:25 a. m. (30)	.447	1.13	.24	13.9	.0370	9:45 a. m. (30)	5 20
30 to 31			0												
Total			3.61												
April:															
1 to 5			.03												
5	11:00 p. m.	9 55	.64	.36	.20	.18	.06	11:00 p. m.	.335	.800	.09	3.80	.0101	8:40 a. m. (6)	9 40
6 to 9			.08												

¹ If different from date in column 1, date is in parentheses after the time.² Snow.³ Snow on ground.⁴ No record.

TABLE 22.—Summary of rainfall and run-off, watershed 20, 1939—Continued

Date	Rainfall							Run-off							
	Time began	Duration	Total amount	Intensity				Time rise began	Rate at		Total amount	Maximum rate		Time of maximum rate ¹	Period or rise
				Maximum for—			Average rate for duration of rain-fall		Time rise began	Time run-off totaled					
				5-minute period	15-minute period	30-minute period									
		<i>Hr. min.</i>	<i>In.</i>	<i>In. per hr.</i>	<i>In. per hr.</i>	<i>In. per hr.</i>	<i>In. per hr.</i>		<i>Sec.-ft.</i>	<i>Sec.-ft.</i>	<i>In.</i>	<i>Sec.-ft.</i>	<i>In. per hr.</i>		<i>Hr. min.</i>
April—Con.															
9	11:20 p. m.	4 30	0.28	0.12	0.12	0.12	0.06	11:40 p. m.	0.529	0.764	0.05	1.81	0.0048	3:20 a. m. (10)	3 40
10	11:56 p. m.	4 32	.28	.43	.20	.10	.06	11:56 p. m.	.727	.976	.08	2.59	.0069	5:55 a. m. (11)	5 59
11 to 14			.05												
14	5:40 p. m.	20 0	2.12	2.28	.76	.40	.11	5:40 p. m.	.618	1.24	1.44	46.9	.1248	5:05 a. m. (18)	
14 to 30			.18												
Total			3.66												
May:															
1 to 8			.05												
8	9:10 p. m.	2 59	.53	1.68	.60	.34	.18	9:30 p. m.	.104	.235	.01	.529	.0014	4:40 p. m. (9)	19 10
9 to 28			.20												
28	12:32 a. m.	10	.31	2.76	1.24	.62	1.86	12:32 a. m.	.019	.035	.002	.190	.0005	2:40 a. m.	
28 to 31			0												
Total			1.09												
June:															
1 to 10			1.08												
10	12:40 p. m.	50	.80	4.08	2.40	1.44	.96	12:50 p. m.	.025	.039	.02	2.85	.0076	2:22 p. m.	
11 to 13			0												
13	7:40 a. m.	5 5	.84	.72	.48	.38	.17	7:40 a. m.	.022	.071	.02	2.27	.0060	1:00 p. m.	5 20
13 to 18			0												
18	7:43 a. m.	16 5	2.70	1.71	1.48	1.14	.16	7:43 a. m.	.017	.320	.26	11.2	.0298	12:25 p. m.	4 55
19 to 22			.07												
22	11:36 a. m.	1 58	.44	1.20	.72	.40	.22	12:40 p. m.	.152	.302	.02	1.51	.0040	5:10 p. m.	4 30
22 to 29			0												
29	1:44 p. m.	36	.32	1.02	.56	.60	.53	1:44 p. m.	.052	.089	.003	.529	.0014	4:15 p. m.	
29 to 30			0												
Total			6.25												
July:															
1 to 4			.03												
4	9:45 p. m.	1 25	.74	4.14	2.48	1.44	.52	9:46 p. m.	.028	.083	.01	1.81	.0048	11:35 p. m.	
4 to 6			0												
6	4:15 a. m.	36	.66	2.28	1.68	.88	1.10	4:15 a. m.	.052	.131	.05	10.7	.0285	6:45 a. m.	
6 to 8			0												
8	5:05 a. m.	2 11	1.91	3.72	2.12	1.35	.87	5:05 a. m.	.056	.529	.55	75.3	.2003	8:34 a. m.	
8 to 18			0												
18	3:00 a. m.	6 24	.67	.36	.28	.22	.10	3:40 a. m.	.089	.152	.01	.764	.0020	12:45 p. m.	9 5
18 to 20			0												
20	4:30 p. m.	49	1.13	4.80	2.92	1.68	1.38	4:40 p. m.	.077	.320	.18	66.9	.1780	5:11 p. m.	31
20 to 26			.04												
26	5:06 a. m.	34	.72	3.72	2.44	1.40	1.27	5:20 a. m.	.152	.378	.04	13.9	.0370	5:32 a. m.	12
26 to 29			.03												
29	5:20 a. m.	3 11	.47	.66	.58	.36	.15								
29 to 31			0												
Total			6.40												
August:															
1 to 8			.05												
8	6:15 a. m.	1 18	.33	.84	.32	.24	.25								
8 to 13			0												
13	1:00 p. m.	35	.46	2.28	1.04	.52	.79								
13 to 31			.40												
Total			1.24												
September:															
1 to 29			.52												
29	9:01 p. m.	7 55	.65	.36	.24	.18	.08								
30			0												
Total			1.17												
October:															
1 to 10			0												
10	4:30 p. m.	2 20	.25	.36	.28	.24	.11								
10 to 25			.01												
25	12:20 a. m.	15 17	2.52	4.20	2.40	1.26	.16	1:40 a. m.	.005	.083	.04	13.9	.0370	9:42 a. m. (26)	
26			0												
27	3:57 a. m.	7 6	1.32	1.32	1.12	.92	.19	4:00 a. m.	.052	.104	.09	14.4	.0383	6:00 a. m.	
27 to 31			0												
Total			4.10												
November:															
1 to 30			.72												
December:															
1 to 2			0												
2	9:30 a. m.	3 34	.37	.84	.48	.30	.10	10:40 a. m.	.031	.112	.009	.401	.0011	1:50 a. m.	3 10
2 to 13			.40												
13	2:00 a. m.	4 0	.28	.12	.12	.08	.07	2:00 a. m.	.035	.077	.005	.152	.0004	10:10 a. m.	8 10
13 to 31			.43												
Total			1.48												
Year			36.44												

¹ If different from date in column 1, date is in parentheses after the time.

TABLE 23.—Summary of rainfall and run-off, watershed 172, 1939

LOCATION: Latitude 40°21'58'', longitude 81°48'04''.

PHYSICAL CHARACTERISTICS:

Size.—Length of principal drainage, 2,000 feet (0.38 miles).

Area, 43.6 acres.

Shape factor.—0.47.

Slope.—4 percent of watershed with slope less than 6 percent; 11 percent of watershed, from 6 to 10 percent; 37 percent of watershed, from 10 to 20 percent; 48 percent of watershed with slope exceeding 20 percent. Average slope, 22.8 percent.

Soil.—Predominating soil is Keene silt loam, an upland soil of residual origin derived largely from shale. The surface soil is brown to grayish brown, 6 to 8 inches in depth. The subsoil is reddish brown to yellowish brown just below the surface soil. The texture is silt loam grading into silty clay loam and then into heavy silty clay. Slight mottling begins at a depth of 12 to 24 inches below which is a layer of heavy silty clay with gray predominating. Shale and sandstone fragments occur throughout the profile but are not so numerous as in the Coschocton or Muskingum soils. Drainage is fair.

Erosion conditions.—Two acres are dissected by frequent large gullies. Landslips occur on approximately 30 percent of the area.

Special features.—This is the steepest of the mixed cover watersheds and has a narrow steep-walled channel of high gradient. There are several high yield springs and seeps.

LAND USE:

Plan.—Entirely reforested, improved practices.

MEASUREMENTS:

Precipitation.—Precipitation is measured at two recording rain gages, stations 145 and 146, and one nonrecording gage, station 106. The maximum and average intensities are obtained from the recording gage that shows the greatest 15-minute intensity. The amount is obtained by Thiessen weight. Snowfall is measured by the rain gages supplemented by snow boards. Snow inventory is based on surveys and observations made on typical areas near project headquarters.

Run-off.—Run-off is measured by dual Parshall measuring flume consisting of main flume with 4-foot throat and supplemental low-flow flume with 6-inch throat. The records of run-off are good. Low flow was inaccurate during the winter because of ice formation in the flume. Laboratory ratings are used for the flumes.

Ground-water levels.—The records from two observation wells indicate the fluctuation of the ground-water tables.

Date	Rainfall							Run-off							
	Time began	Duration	Total amount	Intensity				Time rise began ¹	Rate at		Total amount	Maximum rate		Time of maximum rate ¹	Period of rise
				Maximum for—			Average rate for duration of rainfall		Time rise began	Time run-off totaled					
				5-minute period	15-minute period	30-minute period									
		Hr. min.	In.	In. per hr.	In. per hr.	In. per hr.	In. per hr.		Sec.-ft.	Sec.-ft.	In.	Sec. ft.	In. per hr.		Hr. min.
January:															
1 to 13			0.07												
13	12:01 a. m.	13 15	.37	0.24	0.16	0.14	0.03								
13 to 29			.46												
29 ³	2:00 a. m.	22 35	² 1.36	.36	.32	.30	.06								
30 to 31			0												
Total			2.26												
February:															
1 to 2			0												
2	2:30 a. m.	9 5	.44	.36	.16	.12	.05	2:30 a. m.	0.155	0.254	0.20	0.65	0.0148	2:15 p. m.	
2 to 9			² .39												
9	4:30 p. m.	8 35	.53	.48	.28	.22	.06	5:00 p. m.	.120	.224	.24	1.02	.0232	12:10 p. m. (10)	
10 to 14			0												
14	8:30 p. m.	14 45	1.31	.48	.44	.40	.09	8:30 p. m.	.098	.300	.53	5.88	.1338	3:00 a. m. (15)	6 30
15 to 19			0												
19 ³	4:00 a. m.	1 50	.26	.72	.36	.22	.14	4:00 a. m.	.224	.32	.13	1.23	.0280	6:14 a. m.	2 14
20	12:01 a. m.	3 0	.29	.72	.28	.24	.10	12:01 a. m.	.300	.32	.21	1.62	.0368	2:15 a. m.	2 14
20 to 26			² .33												
26 ³	6:30 a. m.	11 10	.43	.24	.16	.14	.04								
26 to 28			0												
28	2:20 a. m.	2 50	.26	.36	.28	.20	.09	2:20 a. m.	.269	.36	.27	1.84	.0419	4:30 a. m.	2 10
Total			4.24												
March:															
1 to 5			0												
5	1:00 a. m.	4 20	.22	.24	.12	.08	.05	2:00 a. m.	.132	.155	.06	.31	.0070	4:45 a. m.	2 45
5 to 11			.33												
11	10:35 p. m.	11 3	1.35	1.08	.56	.54	.12	1:40 a. m. (12)	.143	.43	.93	5.03	.1144	4:53 p. m. (12)	
12 to 30			.75												
30	3:41 a. m.	7 22	.69	.48	.32	.24	.09	3:41 a. m.	.098	.31	.27	2.03	.0462	9:00 a. m.	5 19
30 to 31			0												
Total			3.34												
April:															
1 to 6			.05												
6	12:01 a. m.	10 30	.70	.24	.20	.18	.07	12:01 a. m.	.077	.210	.12	.69	.0157	8:00 a. m.	7 59
6 to 9			.08												
9	11:30 p. m.	3 20	.28	.24	.16	.12	.08	12:01 a. m. (10)	.120	.181	.06	.34	.0077	2:40 a. m. (10)	2 39
10 to 11			0												
11	12:01 a. m.	4 49	.29	.36	.20	.12	.06	12:05 a. m.	.143	.238	.08	.45	.0102	5:30 a. m.	5 25
11 to 14			.03												

¹ If different from date in column 1, date is in parentheses after the time.² Snow.³ Snow on ground.

TABLE 23.—Summary of rainfall and run-off, watershed 172, 1939—Continued

Date	Rainfall							Run-off							
	Time began	Duration	Total amount	Intensity				Time rise began	Rate at		Total amount	Maximum rate		Time of maximum rate ¹	Period of rise
				Maximum for—			Average rate for duration of rain-fall		Time rise began	Time run-off totaled					
				5-minute period	15-minute period	30-minute period									
April—Con.		<i>Hr. min.</i>	<i>In.</i>	<i>In. per hr.</i>	<i>In. per hr.</i>	<i>In. per hr.</i>	<i>In. per hr.</i>		<i>Sec.-ft.</i>	<i>Sec.-ft.</i>	<i>In.</i>	<i>Sec.-ft.</i>	<i>In. per hr.</i>		<i>Hr. min.</i>
14.....	5:55 p. m.	4 55	0.30	0.24	0.24	0.14	0.06	6:05 p. m.	0.120	0.167	0.08	0.254	0.0058	6:50 a. m. (15)	
15.....	2:45 p. m.	4 15	.38	.24	.20	.20	.09	3:00 p. m.	.167	.30	.15	1.17	.0266	7:10 p. m.	4 10
15 to 16.....			0												
16.....	11:32 a. m.	5 5	.30	.12	.12	.08	.06	12:40 p. m.	.269	.32	.17	.73	.0166	4:20 p. m.	3 40
17.....	6:52 a. m.	6 16	1.33	3.60	1.28	.64	.21	7:00 a. m.	.32	.34	1.18	6.77	.1540	11:57 p. m.	
18 to 30.....			.20												
Total.....			3.94												
May:															
1 to 21.....			.59												
21.....	11:46 p. m.	1 5	.43	1.92	1.12	.58	.40								
22 to 31.....			.20												
Total.....			1.22												
June:															
1 to 10.....			.90												
10.....	12:40 p. m.	30	.79	6.36	2.88	1.58	1.58	12:50 p. m.	.0048	.018	.008	.58	.0132	1:17 p. m.	
10 to 13.....			.19												
13.....	7:40 a. m.	4 39	.88	.48	.48	.34	.19	7:40 a. m.	.0048	.034	.02	.195	.0044	12:30 p. m.	
13 to 18.....			.10												
18.....	7:20 a. m.	14 26	2.90	1.44	1.40	1.02	.20	7:30 a. m.	.0028	.254	.49	4.70	.1069	12:50 a. m. (19)	
19 to 30.....			.74												
Total.....			6.50												
July:															
1 to 4.....			.02												
4.....	9:29 p. m.	1 51	.70	2.76	1.92	1.12	.38	9:29 p. m.	.0048	.040	.005	.224	.0051	10:12 p. m.	25
4 to 6.....			0												
6.....	4:05 a. m.	3 5	.63	1.68	1.16	.70	.20	4:05 a. m.	.0097	.040	.02	.36	.0082	7:45 a. m.	
6 to 8.....			0												
8.....	5:05 a. m.	1 40	2.48	4.44	2.64	2.00	1.49	5:08 a. m.	.0111	.195	.90	26.3	.5983	8:08 a. m.	
8 to 18.....			0												
18.....	2:55 a. m.	4 20	.34	.24	.20	.18	.08								
18.....	9:40 a. m.	2 10	.31	.36	.24	.20	.14								
18 to 20.....			0												
20.....	4:22 p. m.	56	1.04	4.20	2.36	1.40	1.11	4:25 p. m.				5.36	.1219	5:15 p. m.	50
20 to 26.....			0						.0111	.067	.08				
26.....	5:10 a. m.	40	.51	3.48	1.84	1.00	.76	5:12 a. m.	.0111	.025	.008	.224	.0051	5:36 a. m.	
26 to 29.....			.10												
29.....	5:05 a. m.	3 44	.42	1.08	.52	.32	.11	5:05 a. m.	.0111	.025	.004	.077	.0018	7:50 a. m.	
29 to 30.....			0												
30.....	1:11 a. m.	39	.26	.72	.68	.46	.40	1:15 a. m.				.088	.0020	1:40 a. m.	25
30 to 31.....			0						.018	.034	.006				
Total.....			6.81												
August:															
1 to 13.....			.67												
13.....	12:56 p. m.	1 24	.37	.72	.44	.36	.26								
13 to 31.....			.35												
Total.....			1.39												
September															
1 to 29.....			.50												
29.....	9:13 p. m.	1 17	.26	.72	.60	.32	.20								
29 to 30.....			.06												
30.....	12:54 a. m.	2 56	.27	.24	.12	.08	.09								
30.....			.09												
Total.....			1.18												
October:															
1 to 10.....			0												
10.....	4:45 p. m.	1 45	.29	.48	.36	.26	.17								
10 to 25.....			.05												
25.....	12:15 a. m.	13 44	2.60	3.84	2.36	1.24	.19	12:15 a. m.	.0048	.018	.02	.238	.0054	8:56 a. m. (26)	
26 to 27.....			0												
27.....	4:00 a. m.	7 19	1.40	1.44	1.20	.98	.19	4:10 a. m.	.0111	.040	.04	.48	.0109	5:20 a. m.	1 10
27 to 31.....			0												
Total.....			4.34												
November:															
1 to 30.....			.59												
December:															
1 to 2.....			0												
2.....	9:40 a. m.	2 20	.38	.48	.40	.32	.16								
2 to 13.....			.35												
13.....	2:00 a. m.	4 0	.32	.12	.12	.12	.08								
13 to 31.....			.46												
Total.....			1.51												
Year.....			37.32												

¹ If different from date in column 1, date is in parentheses after the time.

TABLE 24.—Summary of rainfall and run-off, watershed 183, 1939

LOCATION: Latitude 40°21'29", longitude 81°46'53".

PHYSICAL CHARACTERISTICS:

Size.—Length of principal drainage, 3,200 feet (0.606 mile).

Area, 74.2 acres.

Shape factor.—0.32.

Slope.—8 percent of watershed with slope less than 6 percent; 29 percent of watershed, 6 to 10 percent; 44 percent of watershed, 10 to 20 percent; 19 percent of watershed with slope exceeding 20 percent. Average slope, 14.8 percent.

Soil.—Predominating soil is Coshocton silt loam, an upland soil of residual origin derived from shale and sandstone. The surface soil is brown to grayish brown and has a depth of 6 to 8 inches. The subsoil is reddish brown to yellowish brown, ranging in texture from silt loam to silty clay loam. Mottling begins at a depth of 24 to 36 inches. Shale and sandstone fragments occur in the profile. Drainage is fair to good.

Erosion conditions.—On the area not in woodland, 50 to 75 percent of the topsoil has been removed by sheet erosion. There are occasional gullies, more than 100 feet apart, on 10 percent of the area (estimated), and frequent gullies, less than 100 feet apart, on 2 acres (estimated). Landslips occur on 10 percent of the area.

Special features.—Woodland covers 13 percent of the area, which is much less than the average (25 percent) for Mill Creek Basin.

LAND USE:

Plan.—Mixed cover, prevailing practices. Compare watershed 177, mixed cover, conservation practices, on which measurements of run-off were started in December 1939.

MEASUREMENTS:

Precipitation.—Precipitation is measured at two recording rain gages, stations 110 and 119, and one nonrecording gage, station 118. The maximum and average intensities are obtained from the recording gage that shows the greatest 15-minute intensity. The amount is obtained by Thiessen weight. Snowfall is measured by the rain gages supplemented by snow boards. Snow inventory is based on surveys and observations made on typical areas near project headquarters.

Run-off.—Run-off is measured by a dual Parshall measuring flume consisting of a main flume with 8-foot throat and a supplemental low-flow flume with 9-inch throat. The records of run-off are very good. Low flow is inaccurate at intervals during the winter because of ice formation in the flume. Laboratory ratings are used for the flumes.

Ground-water levels.—The records from two observation wells indicate the fluctuation of the ground-water table below this watershed.

Date	Rainfall							Run-off							
	Time began	Duration	Total amount	Intensity				Time rise began	Rate at—		Total amount	Maximum rate		Time of maximum rate ¹	Period of rise
				Maximum for—			Average rate for duration of rain-fall								
				5-minute period	15-minute period	30-minute period									
		Hr. min.	In.	In. per hr.	In. per hr.	In. per hr.	In. per hr.		Sec.-ft.	Sec.-ft.	In.	Sec.-ft.	In. per hr.		Hr. min.
January:															
1 to 13			0.05												
13	12:30 a. m.	12 0	.40	0.12	0.12	0.08	0.03								
13 to 29			2.36												
29 ³	2:30 a. m.	20 0	1.41	.60	.40	.34	.07	2:40 a. m.	0.26	0.32	0.61	5.66	0.0756	3:20 a. m. (30)	
30 to 31			0												
Total			2.22												
February:															
1 to 2			0												
2	2:00 a. m.	7 56	.38	.24	.16	.12	.05	2:20 a. m.	.17	.30	.02	1.23	.0164	2:00 p. m.	
2 to 9			2.28												
9	4:00 p. m.	9 0	.58	.48	.36	.22	.06	4:00 p. m.	.09	.22	.22	1.82	.0243	12:15 p. m. (10)	
10 to 14			0												
14	8:15 p. m.	9 20	1.22	.48	.32	.30	.13	8:15 p. m.	.09	.32	.44	8.87	.1185	3:15 a. m. (15)	18 35
15 to 19			0												
19 ³	3:55 a. m.	19 9	.55	.84	.36	.20	.03	3:55 a. m.	.22	.30	.30	2.22	.0296	2:10 a. m. (20)	
20 to 26			2.16												
26 ³	12:01 a. m.	9 29	.46	.24	.16	.14	.05	2:50 a. m.	.064	.32	.46	2.70	.0361	4:57 a. m. (28)	
27 to 28			.31												
Total			3.94												
March:															
1 to 5			0												
5	12:50 a. m.	6 0	.27	.12	.12	.08	.04	1:00 a. m.	.09	.17	.05	.41	.0055	5:00 a. m.	4 0
5 to 11			0												
11	3:55 a. m.	18 09	1.70	.96	.44	.38	.09	3:55 a. m.	.031	.30	.64	4.38	.0585	6:20 p. m. (12)	
12 to 27			.15												
27	4:40 a. m.	11 10	.36	.12	.12	.10	.03	6:00 a. m.	.024	.064	.03	.20	.0027	4:00 p. m.	
28 to 29			0												
29	4:00 p. m.	15 30	.80	.60	.32	.24	.05	4:00 p. m.	.024	.22	.17	1.94	.0259	9:30 p. m. (30)	
30 to 31			0												
Total			3.28												
April:															
1 to 5			.05												
5	11:00 p. m.	10 40	.67	.24	.20	.16	.06	11:00 p. m.	.041	.19	.08	.94	.0126	7:35 a. m. (6)	8 35
6 to 9			.08												
9	11:10 p. m.	3 50	.30	.24	.20	.16	.08								
10			0					12:01 a. m.	.09	.19	.04	.46	.0061	2:50 a. m.	2 49
11	12:01 a. m.	5 15	.32	.48	.20	.12	.06	12:18 a. m.	.12	.26	.06	.70	.0094	6:00 a. m.	5 42

¹ If different from date in column 1, date of maximum rate is in parentheses after the time.

² Snow.

³ Snow on ground.

TABLE 24.—Summary of rainfall and run-off, watershed 183, 1939—Continued

Date	Rainfall							Run-off							
	Time began	Duration	Total amount	Intensity				Time rise began	Rate at—		Total amount	Maximum rate		Time of maximum rate ¹	Period of rise
				Maximum for—			Average rate for duration of rain-fall		Time rise began	Time run-off totaled		In.	Sec.-ft.		
				5-minute period	15-minute period	30-minute period									
		Hr. min.	In.	In. per hr.	In. per hr.	In. per hr.	In. per hr.		Sec.-ft.	Sec.-ft.	In.	Sec.-ft.	In. per hr.		Hr. min
April—Con.															
11 to 15	2:50 p. m.	13 27	0.37	2.16	1.24	0.72	0.14	3:50 p. m.	0.17	0.37	1.15	8.87	0.1185	12:13 a. m. (18)	
15 to 30			1.84												
			.23												
Total			3.86												
May:															
1 to 21			.48												
21 to 31	3:21 p. m.	9	.45	4.92	1.80	.90	3.00								
			.52												
Total			1.45												
June:															
1 to 10			1.09												
10 to 13	12:50 p. m.	54	.80	5.16	2.56	1.30	.89	1:00 p. m.	.0005	.024	.009	.59	.0079	2:25 p. m.	
13 to 18	7:40 p. m.	4 11	.10	.48	.40	.36	.22	10:00 a. m.	.0003	.031	.02	.76	.0102	12:45 p. m.	2 45
			.92												
18 to 22	7:27 a. m.	20 10	0	1.32	.96	.86	.16	8:00 a. m.	.0007	.22	.61	13.7	.1830	12:52 a. m. (19)	
			3.24												
22 to 30	11:50 a. m.	50	.08	1.44	1.12	.60	.84	12:30 p. m.	.053	.26	.12	4.38	.0585	3:50 p. m.	
			.70												
			.15												
Total			7.08												
July:															
1 to 4			.06												
4 to 6	9:57 p. m.	1 43	.78	3.60	1.72	.96	.46	9:57 p. m.	.0108	.041	.02	1.00	.0134	10:17 p. m.	37
			0												
6 to 8	4:20 a. m.	42	.51	3.48	1.16	.82	.73	4:40 a. m.	.041	.064	.03	2.35	.0314	7:58 a. m.	
			0												
8 to 18	5:13 a. m.	1 48	2.00	3.00	2.24	1.74	1.11	5:14 a. m.	.010	.19	.64	37.8	.5050	8:19 a. m.	
			0												
18 to 20	3:00 a. m.	6 40	.66	.24	.20	.20	.10								
			0												
20 to 26	4:19 p. m.	1 1	1.12	3.12	2.40	1.30	1.10	4:25 p. m.	.013	.077	.23	30.0	.4008	5:12 p. m.	47
			0												
26 to 29	5:18 a. m.	1 22	.67	3.36	1.96	1.18	.49	5:18 a. m.	.010	.053	.09	12.6	.1683	5:40 a. m.	30
			.27												
29 to 30	5:20 a. m.	3 2	.71	1.92	1.16	.70	.21	7:00 a. m.	.053	.064	.09	5.39	.0720	8:05 a. m.	
			0												
30 to 31	1:09 a. m.	46	.35	1.32	1.00	.68	.46	1:09 a. m.	.053	.064	.08	3.90	.0521	1:53 a. m.	44
			0												
Total			7.13												
August:															
1 to 3			0												
3 to 8	9:35 a. m.	2 34	.34	1.44	.56	.26	.13	9:40 a. m.	.044	.064	.01	.84	.0112	1:21 p. m.	
			.18												
8 to 13	6:26 a. m.	26	.33	1.62	.88	.44	.76								
			0												
13 to 31	1:10 p. m.	2 56	.45	1.68	1.04	.54	.15	1:33 p. m.	.064	.064	.004	.49	.0065	2:02 p. m.	
			.08												
Total			1.38												
September:															
1 to 29			.46												
29 to 30	9:20 p. m.	1 10	.29	.60	.36	.30	.25								
			.34												
Total			1.09												
October:															
1 to 10			0												
10 to 25	4:20 p. m.	2 12	.35	.48	.36	.32	.16								
			.01												
25 to 27	12:29 a. m.	17 27	2.34	1.68	.96	.68	.13	(4)							
			0												
27 to 31	4:02 a. m.	6 37	1.42	1.44	1.16	.96	.22	4:44 a. m.	.041	.053	.11	5.93	.0792	5:37 a. m.	53
			0												
Total			4.12												
November:															
1 to 30			.50												
December:															
1 to 2			0												
2 to 13	9:50 a. m.	3 10	.41	.84	.56	.40	.13								
			.36												
13 to 31	2:30 a. m.	4 52	.32	.12	.12	.10	.07								
			.34												
Total			1.43												
Year			37.48												

¹ If different from date in column 1, date of maximum rate is in parentheses after the time.⁴ No record.

TABLE 25.—Summary of rainfall and run-off, watershed 196, 1939

LOCATION: Latitude 40°21'36'', longitude 81°46'04''.

PHYSICAL CHARACTERISTICS:

Size.—Length of principal drainage, 4,600 feet (0.87 mile).

Area, 0.473 square mile (303 acres).

Shape factor.—0.62.

Slope.—Slopes are typical of Mill Creek Basin. Slope distribution has not been determined but average slope is about 15 percent.

Soil.—Predominating soil is Coshocton silt loam, an upland soil of residual origin derived from shale and sandstone. The surface soil is brown to grayish brown and has a depth of 6 to 8 inches. The subsoil is reddish brown to yellowish brown, ranging in texture from silt loam to silty clay loam. Mottling begins at a depth of 24 to 36 inches. Drainage is fair to good. Shale and sandstone fragments occur in the profile.

Erosion conditions.—On the area not in woodland, 50 to 75 percent of the topsoil has been removed by sheet erosion. There are occasional gullies, more than 100 feet apart, on 10 percent of the area (estimated), and frequent gullies, less than 100 feet apart, on 10 acres (estimated). Landslips occur on 1 percent of the area.

LAND USE:

Plan.—Mixed cover, prevailing practices.

MEASUREMENTS:

Precipitation.—Precipitation is measured at nine recording rain gages, stations 102, 107, 108, 109, 110, 113, 115, 116,

and the central meteorological station, and three non-recording gages, stations 104, 111, and 117. The maximum and average rainfall intensities are obtained from the recording rain gage that shows the greatest 15-minute intensity. The amount is obtained by Thiessen weight. Snowfall is measured by the rain gages supplemented by snow boards. Snow inventory is based on surveys and observations made on typical areas near project headquarters.

Run-off.—Run-off is measured by current-meter station with Columbus deep-notch weir control. Records of run-off are very good. The rating curve is well established for the lower range of heads, which represents at least 90 percent of the outflow. There is occasional inaccuracy of recession curves because of silt deposits behind the control.

Ground-water levels.—The records from four observation wells indicate the fluctuation of the water table below this watershed.

SUMMARY OF RECORDS, APRIL 1937 TO DECEMBER 1939:

Rainfall.—Average annual precipitation, 37.58 inches. Maximum annual precipitation, 37.72 inches, 1938.

Run-off.—Average annual run-off, 14.38 inches. Maximum annual run-off, 14.90 inches, 1938. Maximum rate of run-off, 0.203 inch per hour (62.1 second-feet), July 8, 1939. Minimum rate of run-off, 0.000 inch per hour (0.018 second-foot), September 17, 1939.

Date	Rainfall							Run-off							
	Time began	Duration	Total amount	Intensity				Time rise began	Rate at		Total amount	Maximum rate		Time of maximum rate ¹	Period of rise
				Maximum for—			Average rate for duration of rain-fall		Time rise began	Time run-off totaled					
				5-minute period	15-minute period	30-minute period									
January:		Hr. min.	In.	In. per hr.	In. per hr.	In. per hr.	In. per hr.		Sec.-ft. 0.095	Sec.-ft. 1.19	In. 0.59	Sec.-ft.	In. per hr.		Hr. min.
1 to 29			² 0.69												
29 ³	2:00 a. m.	26 58	1.23	0.36	0.24	0.24	0.05	7:00 a. m.				17.1	0.0560	3:40 a. m. (30)	20 40
30 to 31			0												
Total			1.92												
February:															
1 to 2			.14												
2	2:00 a. m.	8 20	.43	.24	.16	.14	.05	2:20 a. m.	.831	1.47	.26	6.11	.0200	2:00 p. m.	
2 to 9			² .12												
9	4:00 p. m.	6 55	.58	.48	.36	.18	.08	4:06 p. m.	.729	1.08	.39	7.66	.0251	12:15 p. m. (10)	
10 to 14			0												
14	8:20 p. m.	11 30	1.18	.48	.40	.40	.10	8:20 p. m.	.661	1.40	.48	28.6	.0935	3:00 a. m. (15)	6 40
15 to 19			0												
19 ³	3:50 a. m.	17 15	.63	.72	.32	.20	.04	3:50 a. m.	1.33	1.86	.42	11.6	.0358	2:15 a. m. (20)	
20 to 26			.30												
26	12:01 a. m.	10 31	² .67	.24	.16	.12	.06	1:00 a. m.	.593	1.86	.59	12.9	.0422	4:30 a. m. (28)	
26 to 28			0												
Total			4.05												
March:															
1 to 5			0												
5	12:30 a. m.	5 20	.28	.12	.12	.10	.05	1:20 a. m.	.763	.921	.07	1.86	.0061	4:50 a. m.	3 30
5 to 11			0												
11	4:00 a. m.	9 6	1.68	1.08	.56	.50	.18	5:20 a. m.	.406	1.69	.86	21.0	.0687	5:10 p. m. (12)	
12 to 27			.17												
27	4:50 a. m.	9 40	.43	.12	.12	.10	.04	7:20 a. m.	.337	.406	.05	.970	.0032	4:20 p. m.	9 0
27 to 29			0												
29	4:00 p. m.	12 20	.80	.48	.32	.28	.06	4:00 p. m.	.299	1.19	.22	8.42	.0276	9:30 a. m. (30)	17 30
30 to 31			0												
Total			3.36												
April:															
1 to 5			.04												
5	11:00 p. m.	11 30	.70	.24	.16	.16	.06	11:00 p. m.	.406	1.02	.12	3.64	.0119	8:00 a. m. (6)	9 0
6 to 9			.11												
9	11:10 p. m.	3 50	.28	.24	.16	.14	.07	11:40 p. m.	.627	1.14	.06	2.23	.0073	2:40 a. m. (10)	3 0
10			0												
11	12:08 a. m.	4 18	.33	.48	.24	.12	.08	12:18 a. m.	.872	1.19	.11	3.10	.0101	5:25 a. m.	5 7
11 to 14			.06												

¹ If different from date in column 1, date of maximum rate is in parentheses after the time.

² Snow.

³ Snow on ground.

TABLE 25.—Summary of rainfall and run-off, watershed 196, 1939—Continued

Date	Rainfall							Run-off							
	Time began	Duration	Total amount	Intensity				Time rise began ¹	Rate at		Total amount	Maximum rate		Time of maximum rate	Period of rise
				Maximum for—			Average rate for duration of rain-fall		Time rise began	Time run-off totaled		Maximum rate	Time of maximum rate		
				5-minute period	15-minute period	30-minute period									
		Hr. min.	In.	In. per hr.	In. per hr.	In. per hr.	In. per hr.		Sec.-ft.	Sec.-ft.	In.	Sec.-ft.	In. per hr.		Hr. min.
April—Con.															
14	5:35 p. m.	19 13	2.17	1.97	1.12	0.70	0.11	6:00 p. m.	0.763	1.95	1.39	26.3	0.0860	12:15 a. m. (18)	
15 to 30			.12												
Total			3.81												
May:															
1 to 8			.06												
8	9:10 p. m.	2 46	.56	.60	.36	.26	.20	9:10 p. m.	.158	.242	.03	.503	.0016	5:00 p. m. (9)	
9 to 21			0												
21	3:15 p. m.	2 14	.74	2.64	1.60	.90	.33	3:18 p. m.	.076	.118	.02	9.19	.0301	12:23 a. m. (22)	
22 to 28			.12												
28	12:30 a. m.	14	.13	.96	.52	.26	.56	(⁴)							
28 to 31			0												
Total			1.61												
June:															
1 to 3			.33												
3	4:36 a. m.	2 44	.40	1.80	.16	.14	.15	4:40 a. m.	.066	.088	.01	.593	.0019	12:00 m.	
3 to 9			.25												
9	3:50 p. m.	2 25	.91	3.48	2.68	1.44	.38	3:50 p. m.	.046	.182	.03	5.91	.0193	2:00 p. m. (10)	
10 to 13			0												
13	7:46 a. m.	4 38	.93	1.56	.40	.36	.20	(²)							
13 to 18			0												
18	7:30 a. m.	16 0	3.12	.96	.88	.76	.20	7:30 a. m.	.050	1.40	.69	30.9	.1010	12:55 a. m. (19)	
19 to 22			.10												
22	11:48 a. m.	1 49	.69	2.44	1.20	.64	.38	12:00 m.				5.71	.0187	4:40 p. m.	
22 to 29			0												
29	1:38 p. m.	36	.16	.48	.32	.14	.27	2:00 p. m.				.503	.0016	3:24 p. m.	1 24
29 to 30			0												
Total			6.89												
July:															
1 to 4			.03												
4	9:51 p. m.	1 49	.81	3.36	2.40	1.30	.45	10:00 p. m.				23.3	.0762	10:29 p. m.	
4 to 6			0												
6	4:15 a. m.	1 0	.46	1.92	1.24	.52	.46	4:20 a. m.	.095	.148	.06	18.4	.0602	7:33 a. m.	
6 to 8			0												
8	5:09 a. m.	6 58	2.17	4.68	1.92	1.90	.31	5:13 a. m.				62.1	.2031	8:16 a. m.	
8 to 18			0												
18	2:14 a. m.	7 0	.67	.36	.20	.18	.10	2:50 a. m.				1.62	.0053	12:17 p. m.	9 27
18 to 20			0												
20	4:23 p. m.	57	1.07	3.84	1.92	1.92	1.13	4:25 p. m.				40.0	.1308	5:08 p. m.	43
20 to 26			0												
26	5:04 a. m.	1 16	.81	3.36	1.92	1.02	.64	5:11 a. m.				26.6	.0870	5:46 a. m.	35
26 to 29			0												
29	5:10 a. m.	2 54	.73	2.40	1.44	.84	.25	5:10 a. m.				12.2	.0399	8:15 a. m.	3 5
30	1:10 a. m.	33	.31	1.56	1.08	.72	.56	1:10 a. m.				18.4	.0602	2:00 a. m.	
30 to 31			0												
Total			7.06												
August:															
1 to 3			0												
3	9:35 a. m.	45	.26	.84	.48	.48	.35	9:43 a. m.				.503	.0016	11:20 a. m.	1 37
3 to 7			0												
7	3:00 p. m.	2 29	.42	2.16	.44	.22	.17	6:33 a. m. (8)				1.26	.0041	7:30 a. m. (8)	
8 to 13			0												
13	1:10 p. m.	31	.38	2.52	1.24	.72	.74	1:10 p. m.				1.19	.0039	1:45 p. m.	45
13 to 31			.13												
Total			1.19												
September:															
1 to 29			.48												
29	9:17 p. m.	4 5	.66	.96	.84	.60	.16								
30			0												
Total			1.14												
October:															
1 to 10			0												
10	4:20 p. m.	1 52	.38	.48	.44	.38	.20								
10 to 25			.01												
25	12:19 a. m.	13 51	2.44	3.84	2.20	1.36	.18	12:19 a. m.	.026	.088	.13	3.64	.0119	6:45 p. m.	
26			0												
27	3:55 a. m.	6 7	1.63	1.56	1.12	.96	.27	3:50 p. m.	.076	.110	.20	32.6	.1066	5:22 a. m.	
27 to 31			0												
Total			4.46												
November:															
1 to 30			.56												
December:															
1 to 2			.33												
2	9:30 a. m.	3 20	.48	2.76	.76	.22	.14	10:00 a. m.	.066	.148	.02	1.33	.0043	12:00 m.	2 30
2 to 13			.07												
13	1:30 a. m.	5 20	.33	.36	.16	.14	.06	1:50 a. m.	.002	.110	.01	.452	.0015	6:40 a. m.	5 10
13 to 31			.24												
Total			1.45												
Year			37.40												

¹ If different from date in column 1, date of maximum rate is in parentheses after the time.² Snow.⁴ No record.

TABLE 26.—Summary of rainfall, run-off, and silt loss, watershed 102, 1939

LOCATION: Latitude 40°22'28", longitude 81°47'40".

PHYSICAL CHARACTERISTICS:

Size.—Length of principal drainage, 350 feet. Area, 1.25 acres.

Shape factor.—0.44.

Slope.—17 percent of watershed with slope from 6 to 10 percent; 59 percent of watershed, from 10 to 20 percent; 24 percent of watershed with slope exceeding 20 percent. Average slope, 18.2 percent.

Soil.—Predominating soil is Muskingum silt loam, an upland soil of residual origin derived from sandstone and shale. The surface soil is brown to yellowish brown, normally 6 to 8 inches in depth. The subsoil is yellowish brown, well drained, and contains occasional sandstone and shale fragments, usually increasing with depth.

Erosion conditions.—Sheet erosion has removed 50 to 75 percent of the topsoil. There is no gully erosion.

Special features.—Lysimeter battery Y101 adjoins the watershed and is in grass cover.

LAND USE:

Plan.—Single permanent grass cover, pastured, prevailing practices; similar to adjoining watershed 104.

MEASUREMENTS:

Precipitation.—Precipitation is measured at recording rain gage Y101. If this rain gage fails to operate, records are obtained from rain gage 100 or Y102. Snowfall is measured in the grain gage supplemented by a snow board. Accumulated snow depth is observed regularly and core sampled when sufficiently deep.

Run-off.—Run-off is measured by Parshall measuring flume of 12-inch throat. The records of run-off are excellent.

Silt loss.—Silt loss is measured by silt box and Ramser automatic silt sampler placed below the measuring flume.

SUMMARY OF RECORDS, MARCH 1937 TO DECEMBER 1939:

Rainfall.—Average annual precipitation, 39.51 inches. Maximum annual precipitation, 42.63 inches, 1938. Maximum 5-minute period, 5.40 inches per hour, September 12, 1938. Maximum 30-minute period, 1.46 inches per hour, August 4, 1938.

Run-off.—Average annual run-off, 0.15 inch. Maximum annual run-off, 0.30 inch, 1939. Maximum rate of run-off, 0.448 inch per hour (0.54 second-feet) July 8, 1939. Run-off occurred only during storm period.

Date	Rainfall						Run-off						Silt loss in run-off water	Remarks
	Time began	Duration	Total amount	Intensity		Average rate for duration of rain-fall	Time rise began	Total amount	Maximum rate		Time of maximum rate	Period of rise		
				Maximum for—										
				5-minute period	30-minute period									
		Hr. min.	In.	In. per hr.	In. per hr.	In. per hr.		Inches	Sec.-ft.	In. per hr.		Hr. min.	Tons per acre	
January:														
1 to 29			0.47					0					0	Jan. 1-31, pasture dormant, 2 inches high; soil wet and firm.
29	2:00 a. m.	11 22	1.12	0.36	0.30	0.10		0					0	Jan. 13, 16, 18, 20, 23, and 26, snow.
29 to 31			.15					0					0	Jan. 13—28, snow on ground.
Total			1.74					0					0	
February:														
1 to 2			0					0					0	Feb. 1-13, dormant, 2 inches high; soil wet and firm.
2	2:30 a. m.	8 10	.38	.24	.12	.05		0					0	Feb. 13-28, dormant, 1 inch high; soil wet and firm.
2 to 9			.31					0					0	Feb. 3, 15, 21, and 23, snow.
9	5:00 p. m.	6 44	.54	.36	.18	.08		0					0	Feb. 3-5, 15-18, and 21-25, snow on ground.
10 to 14			0					0					0	
14	8:30 p. m.	13 50	1.38	.48	.38	.10		0					0	
15 to 20			.23					0					0	
20	12:01 a. m.	2 32	.37	.48	.24	.15		0					0	
21	11:20 a. m.	6 50	.28	.24	.06	.04		0					0	
21 to 26			.01					0					0	
26	1:00 a. m.	5 50	.32	.12	.10	.05	11:50 a. m.	.004	0.011	0.009	1:20 p. m.	1 30	0	
26 to 28			.21					0					0	
Total			4.03					.004					0	
March:														
1 to 11			.25					0					0	Pasture dormant, 1 inch high; soil wet and firm.
11	5:10 a. m.	22 18	1.89	.96	.36	.08		0					0	Growing, 1 inch high; soil fairly wet and firm.
12 to 27			.30					0					0	Growing, 1½ inch high; soil fairly wet and firm.
27	5:00 a. m.	9 30	.36	.12	.10	.04		0					0	
27 to 30			.08					0					0	
30	3:30 a. m.	8 30	.72	.36	.22	.08		0					0	
30 to 31			0					0					0	
Total			3.60					0					0	
April:														
1 to 5			.02					0					0	Apr. 1-18, pasture growing, 2 inches high; soil fairly wet and firm from April 1-5, wet and firm from April 5-18.
5	11:00 p. m.	11 0	.72	.24	.20	.07		0					0	
6 to 9			.10					0					0	
9	11:30 p. m.	3 10	.26	.24	.14	.08		0					0	
9 to 10			0					0					0	
10	11:30 p. m.	3 37	.35	.76	.16	.10		0					0	
11 to 14			0					0					0	
14	6:00 p. m.	4 32	.36	.24	.15	.08		0					0	
15	3:40 p. m.	3 40	.35	.36	.22	.10		0					0	
16	11:40 a. m.	4 22	.27	.12	.08	.06		0					0	
16 to 17			.03					0					0	
17	10:53 p. m.	3 45	1.27	4.08	.70	.34		0					0	
18 to 30			.17					0					0	
Total			3.90					0					0	

TABLE 26.—Summary of rainfall, run-off, and silt loss, watershed 102, 1939—Continued

Date	Rainfall						Run-off						Silt loss in run-off water	Remarks	
	Time began	Dura- tion	Total amount	Intensity			Time rise began	Total amount	Maximum rate		Time of maximum rate	Period of rise			
				Maximum for—		Average rate for dura- tion of rain- fall									
				5- minute period	30- minute period										
		Hr. min.	In.	In. per hr.	In. per hr.	In. per hr.		In.	Sec.-ft.	In. per hr.		Hr. min.	Tons per acre		
May:															
1 to 9			0.09					0						0	Apr. 26-May 12, pasture
9	4:14 a. m.	3 8	.65	2.64	0.56	0.21		0						0	heavily grazed.
9 to 31			.62					0						0	Pasture growing, 3 inches
Total			1.36					0						0	high; soil fairly wet and
June:															firm.
1 to 10			.71					0						0	May 26-June 10, pasture
10	12:33 p. m.	37	.95	4.68	1.52	1.54	1:03 p.m.	.01	0.140	0.116	1:08 p.m.	5	0	0	heavily grazed.
11 to 13			0					0					0	0	June 1-14, pasture growing, 6
13	7:47 a.m.	4 30	.91	.42	.40	.20		0					0	0	inches high; soil moist and
13 to 18			0					0					0	0	firm.
18	7:30 a.m.	14 10	2.82	1.08	.76	.20		0					0	0	Pasture growing, 8 inches
19 to 22			.07					0					0	0	high; soil moist and firm.
22	11:57 a.m.	1 28	.53	1.38	.35	.36		0					0	0	Pasture growing, 10 inches
22 to 29			0					0					0	0	high; soil fairly wet and
29	1:41 p.m.	36	.44	2.46	.86	.73		0					0	0	firm.
29 to 30			0					0					0	0	Pasture growing, 11 inches
Total			6.43					.01					0	0	high; soil moist and firm.
July:															
1 to 4			.04					0						0	July 1-31, pasture heavily
4	9:51 p.m.	1 29	.75	4.32	1.22	.51		0					0	0	grazed.
4 to 6			.03					0					0	0	Pasture growing, 11 inches
6	4:18 a.m.	38	.52	2.64	.82	.82		0					0	0	high; soil moist and firm.
6 to 8			0					0					0	0	Same as July 4, except soil
8	5:05 a.m.	2 58	2.62	4.56	1.88	.88	5:10 a.m.	.18	.54	.448			.002	0	fairly wet and firm.
8 to 18			0					0					0	0	Same as July 4.
18	3:00 a.m.	6 5	.60	.36	.20	.10		0					0	0	Same as July 4 except soil
18 to 20			0					0					0	0	moist and soft.
20	4:31 p.m.	31	.44	2.28	.84	.85		0					0	0	Same as July 4 except soil
20 to 26			0					0					0	0	fairly wet and soft.
26	5:12 a.m.	38	.55	3.72	1.08	.87		0					0	0	Do.
26	9:47 p.m.	13	.34	3.84	.68	1.57		0					0	0	Do.
26 to 29			0					0					0	0	
29	5:10 a.m.	3 40	.34	.60	.28	.09		0					0	0	Same as July 18.
30	1:10 a.m.	50	.34	1.20	.54	.41		0					0	0	Same as July 20.
30 to 31			0					0					0	0	
Total			6.57					.18					.002	0	
August:															
1 to 7			.09					0					0	0	Pasture in seed stage by
7	3:00 p.m.	2 3	.47	2.88	.52	.23		0					0	0	Aug. 15, 8 inches high;
8 to 13			0					0					0	0	soil fairly wet and soft.
13	1:08 p.m.	5	.53	1.68	.38	.49		0					0	0	
13 to 31			.21					0					0	0	
Total			1.30					0					0	0	
September:															
1 to 29			.39					0					0	0	Pasture semi-dormant, 4
29	9:10 p.m.	5 17	.64	.48	.24	.12		0					0	0	inches high; soil dry and
30			0					0					0	0	loose.
Total			1.03					0					0	0	
October:															
1 to 10			0					0					0	0	Oct. 1-Nov. 20, pasture semi-
10	5:25 p.m.	1 14	.35	.60	.40	.28		0					0	0	dormant, 2 inches high;
10 to 25			.03					0					0	0	heavily grazed.
25	12:23 a.m.	12 58	1.97	3.60	1.46	.15		0					0	0	Soil dry and hard to Oct. 25.
26	8:26 a.m.	28	.75	3.48	1.46	1.60	8:37 a.m.	.09	.540	.429	8:44 a.m.	9	.003	0	Same as Oct. 1-Nov. 20,
26 to 27			.03					0					0	0	except soil fairly wet and
27	4:07 a.m.	10 19	1.43	1.44	.90	.14	4:48 a.m.	.02	.086	.068	5:03 a.m.	56	0	0	soft.
28 to 31			0					0					0	0	
Total			4.56					.11					.003	0	
November:															
1 to 30			.56					0					0	0	
December:															
1 to 2			0					0					0	0	Dec. 1-31, pasture dormant, 2
2	9:50 a.m.	3 18	.43	.60	.28	.13		0					0	0	inches high.
2 to 13			.35					0					0	0	Soil fairly wet and soft.
13	2:00 a.m.	4 20	.31	.48	.18	.07		0					0	0	Soil wet and soft.
13 to 31			.31					0					0	0	
Total			1.40					0					0	0	
Year			36.48					.30					.005	0	

TABLE 27.—Summary of rainfall, run-off, and silt loss, watershed 103, 1939

LOCATION: Latitude 40°21'58'', longitude 81°47'49.''

PHYSICAL CHARACTERISTICS:

Size.—Length of principal drainage, 275 feet. Area, 0.650 acres.

Shape factor.—0.37.

Slope.—64 percent of watershed with slope from 6 to 10 percent; 36 percent of watershed, from 10 to 20 percent. Average slope, 11.3 percent.

Soil.—Predominating soil is Keene silt loam, an upland soil of residual origin derived largely from shale. The surface soil is brown to grayish brown, 6 to 8 inches in depth. The subsoil is reddish brown to yellowish brown just below the surface soil. The texture is silt loam grading into silty clay loam and then into heavy silty clay. Slight mottling begins at a depth of 12 to 24 inches below which is a layer of heavy silty clay with gray predominating. Shale and sandstone fragments occur throughout the profile but are not so numerous as in the Coshocton or Muskingum soils. Drainage is fair.

Erosion conditions.—Sheet erosion has removed 50 to 75 percent of the topsoil. There is one shallow gully. Erosional deposit at the lower end of the watershed covers 15 square feet.

LAND USE:

Plan.—Rotated crops. Conservation practices will begin in 1941; similar to adjoining watershed 110.

MEASUREMENTS:

Precipitation.—Precipitation is measured at recording rain gage 107. If this gage fails to operate, records are obtained from rain gages, 102, 113, or the central meteorological station. Snowfall is measured in the rain gage supplemented by a snow board. Accumulated snow depth is observed regularly and core sampled when sufficiently deep.

Run-off.—Run-off is measured by type-H measuring flume of 2-foot depth. The records of run-off are very good. Silt deposits cause inaccuracy of recession curve during major storms.

Silt loss.—Silt loss is measured by silt box and Ramser automatic silt sampler placed below the measuring flume.

Date	Rainfall							Run-off ¹						Remarks
	Time began	Duration	Total amount	Intensity			Time rise began ²	Total amount	Maximum rate		Time of maximum rate ²	Period of rise	Silt loss in run-off water ³	
				Maximum for—		Average rate for duration of rain-fall								
				5-minute period	30-minute period									
		Hr. min.	In.	In. per hr.	In. per hr.	In. per hr.		In.	Sec.-ft.	In. per hr.		Hr. min.	Tons per acre	
March:														
1 to 5			0											
5	12:30 a. m.	5 0	.31	0.12	0.10	0.06								Corn stubble 8 inches high; soil wet and firm.
5 to 11			0					0						Do.
11	4:00 a. m.	9 40	.46	.24	.18	.05		0						Do.
11 to 12			.04					0						Do.
12	1:42 a. m.	6 17	.76	.48	.32	.12	2:05 a. m.	.31	0.07	0.11				Do.
12	3:54 p. m.	4 46	.70	1.08	.44	.15	3:54 p. m.	.48	.34	.52	4:25 p. m.	31		Corn stubble 8 inches high; soil fairly wet and firm.
12 to 27			.19					0						
27	4:50 a. m.	10 30	.44	.12	.10	.04		0						
27 to 30			.15					0						
30	3:40 a. m.	8 20	.76	.48	.28	.09	6:46 a. m.	.07	.02	.03				Do.
30 to 31			0					0						
Total			3.81					4.86						
April:														
1 to 5			.04					0						
5	11:00 p. m.	11 10	.76	.24	.18	.07	11:25 p. m.	.04	.01	.02	12:09 a. m. (6)	44		Corn stubble 8 inches high; soil wet and firm.
6 to 9			.08					0						Do.
9	11:10 p. m.	3 30	.31	.24	.14	.09	12:01 a. m. (10)	.02	.005	.01	1:05 a. m. (10)	1 4		
11	12:10 a. m.	5 50	.37	.48	.12	.06	12:30 a. m.	.03	.02	.03				Apr. 11-21, corn stubble 8 inches high; soil wet and soft.
11 to 14			.23					0						
14	11:50 p. m.	3 21	.18	.18	.08	.05	1:25 a. m. (5)	.01	.01	.01				
15	2:40 p. m.	4 40	.40	.24	.20	.09	3:00 p. m.	.12	.02	.04	6:05 p. m.	3 5		
16	11:40 a. m.	5 0	.23	.12	.08	.05	12:00 m.	.07	.02	.03				
17	11:42 a. m.	58	.08	.12	.10	.08	11:45 a. m.	.01	.01	.02	11:55 a. m.	10		
17	10:51 p. m.	4 19	1.23	2.52	.60	.28	10:51 p. m.	1.12	.55	.84	10:56 p. m.	6		
18 to 21			0					0						
21	7:20 a. m.	2 40	.08	.12	.10	.03	7:43 a. m.	.01	.01	.01	8:00 a. m.	17		Apr. 24, 25, 26 plowed.
21 to 30			.08					0						
Total			4.07					1.43						
May:														
1 to 21			.75					0						
21	11:45 p. m.	55	.46	1.92	.78	.50	11:47 p. m.	.004	.02	.03	11:50 p. m.	3		May 3 and 4 oats drilled.
22 to 31			.26					0						Oats 3 inches high; soil moist and crusted.
Total			1.47					.004						

¹ Record of run-off started Mar. 6, 1939.² If different from date in column 1, date is in parentheses after the time.³ Record of silt loss started June 8.⁴ Does not include Mar. 5.

TABLE 27.—Summary of rainfall, run-off, and silt loss, watershed 103, 1939—Continued

Date	Rainfall						Run-off						Remarks	
	Time began	Duration	Total amount	Intensity			Time rise began	Total amount	Maximum rate		Time of maximum rate	Period of rise		Silt loss in run-off water
				Maximum for—		Average rate for duration of rain-fall								
				5-minute period	30-minute period									
		Hr. min.	In.	In. per hr.	In. per hr.	In. per hr.		In.	Sec.-ft.	In. per hr.		Hr. min.	Tons per acre	
June:														
1 to 3			0.28					0						
3 to 9	8:36 p. m.	1 59	.28	0.24	0.20	0.14		0						Oats 7 inches high; soil moist and soft.
9	6:55 p. m.	1 53	.19	.36	.12	.10	7:15 p. m.	.005	0.002	0.003	8:45 p. m.	1 30	0	June 9-11, oats 9 inches high; soil moist and soft on June 9 and 10, fairly wet and soft on June 11.
10	12:40 p. m.	32	.74	3.48	1.44	1.38	12:57 p. m.	.17	.91	1.39	1:10 p. m.	13	0	Oats 10 inches high; soil moist and soft.
11	1:13 a. m.	13	.18	1.56	.36	.83	1:15 a. m.	.08	.12	.18	1:22 a. m.	7	0	Oats 14 inches high; soil moist and soft.
11 to 13			0					0						
13	7:50 a. m.	4 50	1.05	.44	.38	.22	9:02 a. m.	.18	.11	.17			0	June 22, oats 16 inches high; soil fairly wet and soft in the forenoon, wet and soft in the afternoon.
13 to 18			0					0						
18	7:30 a. m.	16 34	3.20	1.08	.74	.19	7:53 a. m.	1.27	.39	.60			0	
18 to 22			.13					0						
22	11:48 a. m.	25	.24	.96	.32	.58	12:02 p. m.	.05	.16	.24	12:52 p. m.	50	0	
22	3:16 p. m.	26	.32	1.68	.52	.74	3:16 p. m.	.13	.64	.983	3:32 p. m.	16	.075	
22 to 30			.19					0					0	
Total			7.11					1.88					5.585	
July:														
1 to 4			.01					0					0	July 4-8, oats 20 inches high; soft dough stage; soil soft; soil moist on July 4, fairly wet 4:16 a. m. July 6, wet 6:52 a. m., moist on July 8.
4	9:51 p. m.	1 39	.79	3.60	1.28	.48	9:55 p. m.	.21	.91	1.39	10:01 p. m.	6	.101	
4 to 6			0					0					0	
6	4:16 a. m.	24	.18	1.32	.36	.45	4:20 a. m.	.04	.23	.36	4:28 a. m.	8	0	
6	6:52 a. m.	38	.27	1.44	.52	.43	6:52 a. m.	.11	.49	.74	7:06 a. m.	14	.077	
6 to 8			0					0					0	
8	5:09 a. m.	2 13	2.67	4.68	1.86	1.22	5:11 a. m.	1.84	1.70	2.59	5:18 a. m.	7	1.437	
8 to 18			0					0					0	
18	2:14 a. m.	7 26	.67	.36	.18	.09		0					0	
18 to 20			0					0					0	
20	4:23 p. m.	55	1.03	3.12	1.52	1.12	4:28 p. m.	.53	1.53	2.33			.461	July 18-20, oats mature, 28 inches high; 10 percent lodged; soil moist; soil crusted on July 18, soft July 20.
20 to 26			0					0					0	July 24 oats cut and shocked.
26	5:13 a. m.	37	.52	2.88	1.02	.84	5:17 a. m.	.15	.60	.91	5:23 a. m.	6	.128	Oats stubble 5 inches high; soil moist and soft.
26 to 29			.16					0					0	Do.
29	5:06 a. m.	4 4	.55	.96	.54	.14	6:40 a. m.	.16	.25	.38	7:23 a. m.	43	.038	Oats stubble 5 inches high; soil fairly wet and soft.
30	1:08 a. m.	38	.31	.96	.54	.49	1:18 a. m.	.14	.23	.36	1:24 a. m.	6	.041	
30 to 31			0					0					0	
Total			7.16					3.08					2.283	
August:														
1 to 3			0					0					0	Oats stubble 5 inches high; soil fairly wet and soft.
3	9:30 a. m.	1 46	.28	3.96	.32	.16	9:49 a. m.	.01	.02	.03	9:51 a. m.	2	0	Do.
3 to 8			.16					0					0	
8	6:19 a. m.	1 31	.27	1.56	.20	.18	6:24 a. m.	.04	.08	.12	6:30 a. m.	6	.014	
8 to 13			0					0					0	
13	1:00 p. m.	45	.38	.84	.32	.51	1:29 p. m.	.01	.04	.07	1:40 p. m.	11	0	Do.
13 to 31			.20					0					0	Aug. 18-25 plowed.
Total			1.29					.06					.014	
September:														
1 to 29			.45					0					0	Soil bare, dry and loose.
29	9:17 p. m.	8 53	.60	.84	.32	.07		0					0	
30			0					0					0	
Total			1.05					0					0	
October:														
1 to 10			0					0					0	Oct. 2 wheat and timothy drilled.
10	4:20 p. m.	2 41	.42	.48	.38	.16		0					0	Soil bare, dry and loose.
10 to 25			.02					0					0	
25	12:19 a. m.	14 47	1.98	1.56	.62	.18		0					0	
26	8:30 a. m.	2 40	.61	3.84	1.36	.27	8:38 a. m.	.75	.77	1.18	8:51 a. m.	13	3.436	Oct. 25-27, wheat 3 inches high; soil loose, soil dry on Oct. 25, fairly wet on Oct. 26, wet on Oct. 27.
27	3:55 a. m.	11 38	1.53	1.44	1.06	.14	4:00 a. m.	.99	.37	.57			3.436	
28 to 31			.06					0					0	
Total			4.62					1.74					3.436	
November:														
1 to 30			.76					0					0	
December:														
1 to 2			.23					0					0	Wheat 4 inches high; soil fairly wet and soft.
2	9:30 a. m.	3 30	.62	.72	.54	.18		0					0	Wheat 5 inches high; soil wet and soft.
2 to 13			.12					0					0	
13	1:30 a. m.	4 8	.30	.24	.08	.07		0					0	
13 to 31			.18					0					0	
Total			1.45					0					0	

1 Record of run-off started Mar. 6, 1939.

2 Does not include June 1 to 8.

TABLE 28.—Summary of rainfall, run-off, and silt loss, watershed 104, 1939

LOCATION: Latitude 40°22'12", longitude 81°47'40".

PHYSICAL CHARACTERISTICS:

Size.—Length of principal drainage, 400 feet. Area, 1.33 acres.

Shape factor.—0.36.

Slope.—44 percent of watershed with slope from 10 to 20 percent; 56 percent of watershed with slope exceeding 20 percent. Average slope, 20.7 percent.

Soil.—Predominating soil is Muskingum silt loam, an upland soil of residual origin derived from sandstone and shale. The surface soil is brown to yellowish brown, normally 6 to 8 inches in depth. The subsoil is yellowish brown, well-drained, and contains occasional sandstone and shale fragments.

Erosion conditions.—Sheet erosion has removed 50 to 75 percent of the topsoil. There is no gully erosion.

Special features.—Lysimeter battery Y101 adjoins the watershed and is in grass cover.

LAND USE:

Plan.—Single permanent-grass cover, pastured; similar to adjoining watershed 102. Improved practices will begin in 1940.

MEASUREMENTS:

Precipitation.—Precipitation measured at recording rain gage Y101. If this range gage fails to operate, records are obtained from gage 100 or Y102. Snowfall is measured in the rain gage supplemented by a snow board. Accumulated snow depth is observed regularly and core sampled when sufficiently deep.

Run-off.—Run-off is measured by Parshall measuring flume of 12-inch throat. The records of run-off are excellent.

Silt loss.—Silt loss is measured by silt box and Ramser automatic silt sampler placed below the measuring flume.

SUMMARY OF RECORDS, MARCH 1937 TO DECEMBER 1939:

Rainfall.—Average annual precipitation, 39.51 inches. Maximum annual precipitation, 42.63 inches, 1938. Maximum 5-minute period, 5.40 inches per hour, September 12, 1938. Maximum 30-minute period, 1.46 inches per hour, August 4, 1938.

Run-off.—Average annual run-off, 0.13 inch. Maximum annual run-off, 0.25 inch, 1939. Maximum rate of run-off, 0.584 inch per hour (0.770 second-foot), October 26, 1939. Run-off occurred only during storm periods.

Date	Rainfall						Run-off					Silt loss in run-off water	Remarks	
	Time began	Duration	Total amount	Intensity			Time rise began	Total amount	Maximum rate		Time of maximum rate			Period of rise
				Maximum for—		Average rate for duration of rainfall								
				5-minute period	30-minute period									
		Hr. min.	In.	In. per hr.	In. per hr.	In. per hr.		In.	Sec.-ft.	In. per hr.		Min.	Tons per acre	
January:														
1 to 29			0.47					0					0	Jan. 1-31, pasture dormant, 2 inches high; soil wet and firm. Jan. 13, 16, 18, 20, 23, and 26 snow. Jan. 13-28, snow on ground.
29	2:00 a. m.	11 22	1.12	0.36	0.30	0.10		0					0	
29 to 31			.15					0					0	
Total			1.74					0					0	
February:														
1 to 2			0					0					0	Feb. 1-13, dormant, 2 inches high; soil wet and firm. Feb. 13-28, dormant, 1 inch high; soil wet and firm. Feb. 3, 15, 21, and 23, snow. Feb. 3-5, 15-18, 21-25, snow on ground.
2	2:30 a. m.	8 10	.38	.24	.12	.05		0					0	
2 to 9			.31					0					0	
9	5:00 p. m.	6 44	.54	.36	.18	.08		0					0	
10 to 14			0					0					0	
14	8:30 p. m.	13 50	1.38	.48	.38	.10		0					0	
15 to 20			.23					0					0	
20	12:01 a. m.	2 32	.37	.48	.24	.15		0					0	
21	11:20 a. m.	6 50	.28	.24	.06	.04		0					0	
21 to 26			.01					0					0	
26	1:00 a. m.	5 50	.32	.12	.10	.05		0					0	
26 to 31			.21					0					0	
Total			4.03					0					0	
March:														
1 to 11			.25					0					0	Dormant, 1 inch high; soil wet and firm. Growing, 1 inch high; soil fairly wet and firm. Growing, 1½ inches high; soil fairly wet and firm.
11	5:10 a. m.	22 18	1.89	.96	.36	.08		0					0	
12 to 27			.30					0					0	
27	5:00 a. m.	9 30	.36	.12	.10	.04		0					0	
27 to 30			.08					0					0	
30	3:30 a. m.	8 30	.72	.36	.22	.08		0					0	
30 to 31			0					0					0	
Total			3.60					0					0	
April:														
1 to 5			.02					0					0	Apr. 1-18, pasture growing, 2 inches high; soil fairly wet and firm Apr. 1-5, wet and firm Apr. 5-18.
5	11:00 p. m.	11 0	.72	.24	.20	.07		0					0	
6 to 9			.10					0					0	
9	11:30 p. m.	3 10	.26	.24	.14	.08		0					0	
9 to 10			0					0					0	
10	11:30 p. m.	3 37	.35	.76	.16	.10		0					0	
11 to 14			0					0					0	
14	6:00 p. m.	4 32	.36	.24	.15	.08		0					0	
15	3:40 p. m.	3 40	.35	.36	.22	.10		0					0	
16	11:40 a. m.	4 22	.27	.12	.08	.06		0					0	
16 to 17			.03					0					0	
17	10:53 p. m.	3 45	1.27	4.08	.70	.34		0					0	
18 to 30			.17					0					0	
Total			3.90					0					0	

TABLE 28.—Summary of rainfall, run-off, and silt loss, watershed 104, 1939—Continued

Date	Rainfall						Run-off					Silt loss in run-off water	Remarks
	Time began	Duration	Total amount	Intensity		Time rise began	Total amount	Maximum rate		Time of maximum rate	Period of rise		
				Maximum for—	Average rate for duration of rain-fall								
				5-minute period	30-minute period								
		Hr. min.	In.	In. per hr.	In. per hr.	In. per hr.		In.	Sec.-ft.	In. per hr.		Min.	Tons per acre
May:													
1 to 9			0.09					0					0
9	4:14 a. m.	3 8	.65	2.64	0.56	0.21		0					0
9 to 31			.62					0					0
Total			1.36					0					0
June:													
1 to 10			.71					0					0
10	12:33 p. m.	37	.95	4.68	1.52	1.54	12:57 p. m.	.006	0.056	0.042	1:09 p. m.	12	0
11 to 13			0					0					0
13	7:47 a. m.	4 30	.91	.42	.40	.20		0					0
13 to 18			0					0					0
18	7:30 a. m.	14 10	2.82	1.08	.76	.20		0					0
19 to 22			.07					0					0
22	11:57 a. m.	1 28	.53	1.38	.35	.36		0					0
22 to 29			0					0					0
29	1:41 p. m.	36	.44	2.46	.86	.73		0					0
29 to 30			0					0					0
Total			6.43					.006					0
July:													
1 to 4			.04					0					0
4	9:15 p. m.	1 29	.75	4.32	1.22	.51		0					0
4 to 6			.03					0					0
6	4:18 a. m.	38	.52	2.64	.82	.82		0					0
6 to 8			0					0					0
8	5:05 a. m.	2 58	2.62	4.56	1.88	.88	5:14 a. m.	.12	.321	.244			.001
8 to 18			0					0					0
18	3:00 a. m.	6 5	.60	.36	.20	.10		0					0
18 to 20			0					0					0
20	4:31 p. m.	31	.44	2.28	.84	.85		0					0
20 to 26			0					0					0
26	5:12 a. m.	38	.55	3.72	1.08	.87		0					0
26	9:47 p. m.	13	.34	3.84	.68	1.57		0					0
26 to 29			0					0					0
29	5:10 a. m.	3 40	.34	.60	.28	.09		0					0
30	1:10 a. m.	50	.34	1.20	.54	.41		0					0
30 to 31			0					0					0
Total			6.57					.12					.001
August:													
1 to 7			.09					0					0
7	3:00 p. m.	2 3	.47	2.88	.52	.23		0					0
8 to 13			0					0					0
13	1:08 p. m.	1 5	.53	1.68	.38	.49		0					0
13 to 31			.21					0					0
Total			1.30					0					0
September:													
1 to 29			.39					0					0
29	9:10 p. m.	5 17	.64	.48	.24	.12		0					0
30			0					0					0
Total			1.03					0					0
October:													
1 to 10			0					0					0
10	5:25 p. m.	1 14	.35	.60	.40	.28		0					0
10 to 25			.03					0					0
25	12:23 a. m.	12 58	1.97	3.60	1.46	.15		0					0
26	8:26 a. m.	28	.75	3.48	1.46	1.60	8:33 a. m.	.11	.770	.584	8:48 a. m.	15	.003
26 to 27			.03					0					0
27	4:07 a. m.	10 19	1.43	1.44	.90	.14	4:41 a. m.	.005	.030	.023	5:06 a. m.	25	0
28 to 31			0					0					0
Total			4.56					.12					.003
November:													
1 to 30			.56					0					0
December:													
1 to 2			0					0					0
2	9:50 a. m.	3 18	.43	.60	.28	.13		0					0
2 to 13			.35					0					0
13	2:00 a. m.	4 20	.31	.48	.18	.07		0					0
13 to 31			.31					0					0
Total			1.40					0					0
Year			36.48					.25					.004

TABLE 29.—Summary of rainfall and run-off, watershed 106, 1939

LOCATION: Latitude 40°22'45'', longitude 81°47'56''.

PHYSICAL CHARACTERISTICS:

Size.—Length of principal drainage, 400 feet. Area, 1.56 acres.

Shape factor.—0.42.

Slope.—32 percent of watershed with slope less than 6 percent; 68 percent of watershed with slope from 10 to 20 percent. Average slope, 14.3 percent.

Soil.—Predominating soil is Muskingum loam, an upland soil derived largely from sandstone and lighter in texture throughout the profile than the Muskingum silt loam. It is rather shallow and contains numerous small sandstone fragments. The unweathered sandstone rock occurs at a depth of 18 to 30 inches.

Erosion conditions.—Sheet erosion has removed 50 to 75 percent of the topsoil. There is no gully erosion.

LAND USE:

Plan.—Rotated crops, prevailing practices.

MEASUREMENTS:

Precipitation.—Precipitation is measured at recording rain gage 113. If this rain gage fails to operate records are obtained from gage 115 or 107. Snowfall is measured in the rain gage supplemented by a snow board. Accumulated snow depth is observed regularly and core sampled when sufficiently deep.

Run-off.—Run-off is measured by type H measuring flume of 2.5-foot depth. The records of run-off are very good. Silt deposits cause inaccuracy of recession curve during major storms.

Date	Rainfall						Run-off						Remarks
	Time began	Dura- tion	Total amount	Intensity			Time rise began ¹	Total amount	Maximum rate		Time of maximum rate ¹	Period of rise	
				Maximum for—		Aver- age rate for dura- tion of rain- fall							
				5-min- ute period	30-min- ute period								
March:		<i>Hr. min.</i>	<i>In.</i>	<i>In. per hr.</i>	<i>In. per hr.</i>	<i>In. per hr.</i>		<i>In.</i>	<i>Sec.-ft.</i>	<i>In. per hr.</i>		<i>Hr. min.</i>	
12 to 27			0.13					0					
27	5:10 a. m.	8 20	.30	0.12	0.08	0.04		0					
27 to 30			.17					0					
30	3:00 a. m.	9 0	.71	.48	.30	.08		(?)					
Total			1.31										
April:													
1 to 5			.03					0					
5	11:00 p. m.	11 10	.64	.24	.16	.06	11:59 p. m.	.003	0.003	0.002	1:40 a. m. (6)	1 41	
6 to 9			.05					0					
9	11:20 p. m.	3 20	.30	.24	.14	.09		0					
10	11:52 p. m.	3 41	.31	.36	.14	.08	2:33 a. m. (11)	.003	.006	.004	4:45 a. m. (11)	2 12	
11 to 15			.19					0					
15	12:30 a. m.	2 57	.17	.24	.08	.06	12:55 a. m.	.008	.004	.002	6:35 a. m.	5 40	
15	2:40 p. m.	4 20	.35	.24	.20	.08	4:50 p. m.	.01	.01	.009	6:10 p. m.	1 20	
16	12:30 p. m.	4 10	.24	.12	.08	.06	1:00 p. m.	.007	.005	.003	3:20 p. m.	2 20	
16 to 17			.09					0					
17	10:52 p. m.	3 56	1.10	1.44	.68	.28	10:52 p. m.	.11	.10	.063			
18 to 30			.15					0					
Total			3.62					.14					
May:													
1 to 9			.07					0					
9	4:10 a. m.	2 23	.36	.48	.24	.15		0					
9 to 21			.45					0					
21	11:43 p. m.	1 37	.51	1.20	.64	.31		0					
22 to 31			.24					0					
Total			1.63					0					
June:													
1 to 10			.88					0					
10	12:34 p. m.	40	.49	2.40	.94	.73		0					
10 to 13			.42					0					
13	7:44 a. m.	4 6	.87	.42	.36	.21		0					
13 to 18			0					0					

If different from date in column 1, date is in parentheses after the time.

No record.

TABLE 29.—Summary of rainfall and run-off, watershed 106, 1939—Continued

Date	Rainfall						Run-off						Remarks
	Time began	Duration	Total amount	Intensity			Time rise began	Total amount	Maximum rate		Time of maximum rate	Period of rise	
				Maximum for—		Average rate for duration of rain-fall							
				5-min-ute period	30-min-ute period								
June—Con.		<i>Hr. min.</i>	<i>In.</i>	<i>In. per hr.</i>	<i>In. per hr.</i>	<i>In. per hr.</i>		<i>In.</i>	<i>Sec.-ft.</i>	<i>In. per hr.</i>		<i>Hr. min.</i>	
18.....	7:30 a. m.	5 50	1.38	1.14	0.78	0.24	11:07 a. m.	0.01	0.03	0.019	11:13 a. m.	6	June 18, alfalfa 3 inches high; soil firm; soil moist at 7:30 a. m., wet at 2:40 p. m. Alfalfa 4 inches high; soil fairly wet and firm.
18.....	2:40 p. m.	11 39	1.56	.84	.68	.13	7:16 p. m.	.03	.05	.032			
18 to 22.....			.07					0					
22.....	11:50 a. m.	59	.63	1.92	.60	.64	3:31 p. m.	.005	.05	.030	3:35 p. m.	4	
22 to 30.....			.17					0					
Total.....			6.47					.05					
July:													
1 to 4.....			0					0					
4.....	9:54 p. m.	1 46	.82	4.44	1.50	.46	10:01 p. m.	.002	.02	.013	10:07 p. m.	6	Alfalfa 5 inches high; soil moist and firm.
4 to 6.....			0					0					July 6, alfalfa 5 inches high; soil firm; soil fairly wet at 4:14 a. m., wet at 6:43 a. m. July 8, alfalfa 6 inches high; soil firm; soil moist at 5:14 a. m., fairly wet at 7:40 a. m., wet at 12:30 p. m.
6.....	4:14 a. m.	21	.25	1.32	.50	.71		0					
6.....	6:43 a. m.	35	.23	1.20	.44	.40	7:07 a. m.	.003	.02	.010	7:13 a. m.	6	
6 to 8.....			0					0					
8.....	5:14 a. m.	8	.28	2.04	.56	2.10	5:17 a. m.	.007	.05	.034	5:23 a. m.	6	
8.....	7:40 a. m.	35	.85	2.52	1.40	1.46	7:52 a. m.	.16	.69	.436	8:06 a. m.	14	
8.....	12:30 p. m.	1 17	.63	2.28	.92	.49	12:30 p. m.	.07	.45	.284			
8 to 18.....			0					0					
18.....	3:00 a. m.	6 50	.64	.24	.20	.09		0					
18 to 20.....			0					0					
20.....	4:25 p. m.	55	1.08	4.44	1.86	1.18	4:33 p. m.	.06	.40	.254			
20 to 26.....			0					0					
26.....	5:13 a. m.	37	.60	3.84	1.18	.97	5:21 a. m.	.007	.06	.036	5:30 a. m.	9	
26 to 29.....			.10					0					
29.....	5:10 a. m.	2 43	.68	1.52	.72	.25	7:22 a. m.	.005	.02	.010	7:27 a. m.	5	
30.....	1:08 a. m.	37	.32	1.32	.56	.52	1:38 a. m.	.002	.01	.008	1:50 a. m.	12	
Total.....			6.48					.32					
August:													
1 to 31.....			1.19					0					
September:													
1 to 29.....			.46					0					Sept. 19, alfalfa cut. Alfalfa 4 inches high; soil dry and firm.
29.....	9:20 p. m.	4 45	.64	.60	.50	.13		0					
29 to 30.....			0					0					
Total.....			1.10					0					
October:													
1 to 10.....			0					0					Alfalfa 4 inches high; soil dry and crusted. Oct. 25-27, alfalfa 4 inches high; soil soft; soil dry Oct. 25, fairly wet Oct. 26, wet Oct. 27.
10.....	4:25 p. m.	1 47	.32	.36	.26	.18		0					
10 to 25.....			.08					0					
25.....	12:17 a. m.	12 58	1.94	1.08	.42	.15		0					
26.....	8:25 a. m.	35	.49	2.52	.96	.84	8:46 a. m.	.03	.24	.150	8:54 a. m.	8	
27.....	3:52 a. m.	6 36	1.52	1.68	1.02	.25	4:46 a. m.	.06	.25	.159	5:08 a. m.	22	
27 to 31.....			.01					0					
Total.....			4.36					.09					
November:													
1 to 30.....			.58					0					
December:													
1 to 2.....			.30					0					Alfalfa dormant, 2 inches high; soil fairly wet and soft. Alfalfa dormant, 2 inches high; soil wet and soft.
2.....	9:50 a. m.	3 2	.39	.60	.36	.13		0					
2 to 13.....			.08					0					
13.....	1:30 a. m.	4 20	.34	.36	.14	.08		0					
13 to 31.....			.28					0					
Total.....			1.39					0					

TABLE 30.—Summary of rainfall and run-off, watershed 107, 1939

LOCATION: Latitude 40°21'13'', longitude 81°47'13''.

PHYSICAL CHARACTERISTICS:

Size.—Length of principal drainage, 650 feet. Area, 2.59 acres.

Shape factor.—0.27.

Slope.—78 percent of watershed with slope from 10 to 20 percent; 22 percent of watershed with slope exceeding 20 percent. Average slope, 15.3 percent.

Soil.—Predominating soil is Muskingum loam, an upland soil derived largely from sandstone and lighter in texture throughout the profile than the Muskingum silt loam. It is rather shallow and contains numerous small sandstone fragments. The unweathered sandstone rock occurs at a depth of 18 to 30 inches.

Erosion conditions.—Sheet erosion has removed 50 to 75 percent of the topsoil. There is no gully erosion.

TABLE 30.—Summary of rainfall, run-off, and silt loss, watershed 107, 1939—Continued

Special features.—A seep horizon of rather high yield is intercepted by this watershed.

LAND USE:

Plan.—Reforested, improved practices. Pine trees were planted in April 1939.

MEASUREMENTS:

Precipitation.—Precipitation is measured at recording rain gage 113. If this rain gage fails to operate, records are

obtained from rain gage 115 or 107. Snowfall is measured in the rain gage supplemented by a snow board. Accumulated snow depth is observed regularly and core sampled when sufficiently deep.

Run-off.—Run-off is measured by type H measuring flume of 2-foot depth. The records of run-off are excellent.

Silt loss.—Silt loss is measured by silt box and Ramser automatic silt sampler placed below the measuring flume.

Date	Rainfall						Run-off					Silt loss in run-off water	Remarks
	Time began	Duration	Total amount	Intensity		Time rise began ¹	Total amount	Maximum rate		Time of maximum rate ¹	Period of rise		
				Maximum for—	Average rate for duration of rain-fall			Maximum rate	Time of maximum rate ¹				
		Hr. min.	In.	In. per hr.	In. per hr.	In. per hr.	In.	Sec.-ft.	In. per hr.		Hr. min.	Tons per acre	
January:													
1 to 29			0.39				0					0	
29	3:00 a. m.	11 45	.44	0.12	0.01	0.04	0					0	
29	10:30 p. m.	5 55	.76	.36	.26	.13	12:40 a. m. (29)	.16	0.12	0.046	2:50 a. m. (29)	.004	Dead grass 3 inches high; soil wet and soft; snow on ground.
30 to 31			.10				0					0	
Total			1.69				.16					.004	
February:													
1 to 2			0				0					0	
2	2:00 a. m.	7 50	.35	.24	.14	.04	6:00 a. m.	.05	.05	.019		.001	Feb. 2, dead grass 3 inches high; soil wet and soft.
2 to 5			.15				0					0	Snow.
5			0				6:40 p. m.	.004				0	Melting snow.
6	2:45 p. m.	8 30	.12	.06	.04	.01	12:30 p. m.	.02	.01	.004		.002	Melting snow and rain; soil wet and soft.
6 to 9			0									0	
9	8:55 p. m.	4 35	.24	.36	.18	.05	9:50 p. m.	.01	.045	.017	10:35 p. m.	.001	Soil wet and hard.
10	9:00 a. m.	3 20	.23	.24	.16	.07	9:38 a. m.	.05	.10	.039	11:45 a. m.	0	Same as Feb. 2.
10 to 14			0				0					0	
14	8:30 p. m.	11 44	1.35	.48	.32	.11	11:51 p. m.	.26	.36	.137	3:06 a. m. (15)	.005	Do.
15 to 18			0				0					0	
18			0				12:00 m.	.03	.03	.013	1:10 p. m.	0	Melting snow.
19	3:50 a. m.	2 30	.27	.72	.22	.11	4:16 a. m.	.07	.18	.070	5:45 a. m.	.003	Same as Feb. 2.
20	12:01 a. m.	1 59	.26	.36	.18	.13	12:11 a. m.	.08	.12	.048	1:53 a. m.	0	Do.
20 to 26			.19				0					0	
26	12:01 a. m.	7 30	.35	.24	.10	.05		(2)				0	Melting snow.
27			0				12:00 m.	.09	.09	.036		0	Thawing.
28	12:01 a. m.	4 20	.26	.36	.18	.06	12:40 a. m.	.14	.25	.095	4:05 a. m.	.005	Same as Feb. 2.
Total			3.77				3.80					.017	
March:													
1 to 5			0				0					0	
5	12:50 a. m.	4 50	.26	.12	.08	.05	2:39 a. m.	.004	.005	.002	3:40 a. m.	0	Mar. 1-31, dead grass 3 inches high; soil wet and soft.
5 to 11			0				0					0	
11	4:00 a. m.	11 46	.39	.24	.16	.03		0				0	
12	1:40 a. m.	4 26	.68	.84	.34	.15	2:08 a. m.	.21	.16	.061		.011	
12	3:36 p. m.	3 12	.45	.60	.32	.14	4:17 p. m.	.16	.28	.106		0	
12 to 27			.20				0					0	
27	5:00 a. m.	8 10	.31	.12	.08	.04		0				0	
27 to 30			.07				0					0	
30	3:36 a. m.	7 0	.66	.36	.24	.10	4:53 a. m.	.09	.07	.027	7:40 a. m.	0	
30 to 31			0				0					0	
Total			3.02				.46					.011	
April:													
1 to 5			.03				0					0	
5	11:30 p. m.	11 10	.73	.24	.16	.07	5:58 a. m. (6)	.03	.02	.01	6:30 a. m. (6)	.001	Dead grass 3 inches high; soil fairly wet and soft.
6 to 9			.07				0					0	
9	11:10 p. m.	3 40	.28	.24	.12	.08	1:18 a. m. (10)	.01	.02	.006	2:20 a. m.	0	Trees planted.
11	12:10 a. m.	4 18	.32	.36	.18	.07	3:13 a. m.	.02	.04	.015	4:53 a. m.	.008	Grass and weeds 3 inches high; soil wet and firm.
11 to 14			.03				0					0	Do.
14	5:50 p. m.	5 6	.28	.24	.12	.05	7:12 p. m.	.02	.01	.005		0	Do.
15	2:40 p. m.	4 0	.37	.36	.22	.09	3:51 p. m.	.08	.10	.039	6:15 p. m.	.064	Do.
16	12:20 p. m.	5 5	.27	.12	.06	.05	1:44 p. m.	.07	.04	.017	3:20 p. m.	0	Do.
17	11:36 a. m.	4 44	.06	.12	.08	.08	11:40 a. m.	.008	.02	.006	12:30 p. m.	0	Do.
17	10:44 p. m.	4 9	1.06	1.56	.64	.26	10:51 p. m.	.46	.62	.238		0	Do.
17 to 21			0				0					0	
21	7:25 a. m.	3 52	.09	.12	.06	.02	8:34 a. m.	.004	.004	.002	9:00 a. m.	.002	Grass and weeds 3 inches high; soil wet and crusted.
21 to 30			.15				0					0	
Total			3.74				.70					.075	
May:													
1 to 21			.48				0					0	
21	3:23 p. m.	1 56	.70	2.64	.90	.36	(2)					.002	Grass and weeds 5 inches high; soil moist and hard.
21 to 31			.24				0					0	
Total			1.42				.40					.002	

¹ If different from date in column 1, date is in parenthesis after the time.

² No record.

³ Does not include Feb. 26.

⁴ Does not include May 21.

TABLE 30.—Summary of rainfall, run-off, and silt loss, watershed 107, 1939—Continued

Date	Rainfall						Run-off						Silt loss in run-off water	Remarks
	Time began	Duration	Total amount	Intensity			Time rise began	Total amount	Maximum rate		Time of maximum rate	Period of rise		
				Maximum for—		Average rate for duration of rainfall								
				5-minute period	30-minute period									
		Hr. min.	In.	In. per hr.	In. per hr.	In. per hr.		In.	Sec.-ft.	In. per hour		Hr. min.	Tons per acre	
June:														
1 to 3			0					0					0	
3 to 8	5:08 a. m.	3 51	.40	0.48	0.14	0.10		0					0	Grass and weeds 12 inches high; soil moist and firm.
8 to 9			.12					0					0	Grass and weeds 15 inches high; soil moist and firm.
9 to 10	12:36 p. m.	1 54	.65	4.80	1.18	.34	12:55 p. m.	.006	0.09	0.033	1:12 p. m.	17	.007	Same as June 3.
10 to 13			.16					0					0	
13 to 18	7:52 a. m.	4 28	.94	.60	.44	.21	8:35 a. m.	.01	.02	.010	12:20 p. m.	3 45	0	Grass and weeds 10–20 inches high; soil moist and soft.
18 to 19	7:30 a. m.	5 57	1.39	1.20	.74	.23	8:05 a. m.	.05	.23	.090	11:15 a. m.	3 10	.003	Same as June 13 except soil wet.
19 to 22	4:00 p. m.	11 9	1.45	.72	.60	.13	6:40 p. m.	.12	.25	.095			0	Grass and weeds 12–21 inches high; soil fairly wet and soft.
22 to 23	11:50 a. m.	25	.33	2.04	.52	.79	12:43 p. m.	.001	.02	.006	12:57 p. m.	14	.011	
23 to 24	3:16 p. m.	16	.35	2.44	.70	1.31	3:23 p. m.	.03	.47	.180	3:36 p. m.	13	0	
24 to 30			.18					0					0	
Total			6.47					.22					.021	
July:														
1 to 4			0					0					0	
4 to 6	9:54 p. m.	1 46	.82	1.80	.52	.46	9:59 p. m.	.006	.07	.027	10:09 p. m.	10	0	Grass and weeds 12–24 inches high; soil moist and crusted.
6 to 8	4:16 a. m.	50	.40	1.44	.60	.48	4:28 a. m.	.003	.02	.010			0	Same as July 4 except soil fairly wet and soft.
8 to 8	5:14 a. m.	43	1.13	2.52	1.40	1.58		(2)					.003	Grass and weeds 15–30 inches high; soil soft; moist in the forenoon, wet in the afternoon.
8 to 18	12:30 p. m.	1 17	.63	2.28	.76	.49	12:30 p. m.	.09	.49	.187			0	Grass and weeds 20–40 inches high; soil moist and firm.
18 to 20	3:00 a. m.	6 40	.55	.24	.18	.08		0					0	Same as July 18 except soil fairly wet and soft.
20 to 26	4:25 p. m.	55	1.03	2.64	1.06	1.12	4:30 p. m.	.05	.51	.195			.003	Do.
26 to 29	5:13 a. m.	37	.72	4.60	1.42	1.17	5:18 a. m.	.01	.14	.050	5:31 a. m.	13	.001	Grass and weeds 30–60 inches high; soil soft, moist July 29, fairly wet July 30.
29 to 30	5:15 a. m.	2 49	.70	1.44	.70	.25	6:50 a. m.	.01	.06	.024	7:28 a. m.	38	0	
30 to 31	1:13 a. m.	33	.40	1.56	.72	.73	1:17 a. m.	.02	.14	.053	1:40 a. m.	23	0	
Total			6.49					5.19					.007	
August:														
1 to 7			.24					0					0	
7 to 13	3:00 p. m.	2 26	.29	1.20	.10	.12		0					0	Grass and weeds 30–60 inches high; soil fairly wet and crusted.
13 to 31	1:10 p. m.	31	.42	2.52	.66	.81		0					0	Do.
Total			1.17					0					0	
September:														
1 to 29			.51					0					0	
29 to 30	9:20 p. m.	4 2	.64	.60	.40	.16		0					0	Grass and weeds dying, 20–40 inches high; soil dry and crusted.
30			0					0					0	
Total			1.15					0					0	
October:														
1 to 10			0					0					0	Grass and weeds dead, 20–40 inches high; soil dry and crusted.
10 to 25	4:45 p. m.	2 5	.34	.36	.28	.16		0					0	Do.
25 to 26	12:27 a. m.	12 53	1.79	1.32	.46	.14	2:00 a. m.	.02	.01	.006			0	Same as Oct. 10, except soil fairly wet and soft.
26 to 27	8:34 a. m.	31	.53	2.40	1.04	1.03	8:39 a. m.	.03	.53	.204	8:49 a. m.	10	.002	Do.
27 to 31	4:00 a. m.	3 29	1.07	1.44	.80	.31	4:00 a. m.	.08	.38	.144	5:05 a. m.	1 5	0	
Total			3.99					.13					.002	
November:														
1 to 30			.55					0					0	
December:														
1 to 2			.13					0					0	Dec. 2, dead grass and weeds, 6–12 inches high; soil fairly wet and firm.
2 to 13	9:50 a. m.	2 40	.40	1.08	.46	.15		0					0	Same as Dec. 2 except soil wet and soft.
13 to 31	1:30 a. m.	4 20	.34	.36	.14	.08		0					0	
Total			1.24					0					0	
Year			34.70					6 2.66					.139	

* No record.

* Does not include July 8.

* Does not include Feb. 26, May 21, and July 8.

TABLE 31.—Summary of rainfall, run-off, and silt loss, watershed 109, 1939

LOCATION: Latitude 40°22'13'', longitude 81°47'38''.

PHYSICAL CHARACTERISTICS:

Size.—Length of principal drainage, 350 feet. Area, 1.69 acres.

Shape factor.—0.60.

Slope.—71 percent of watershed with slope from 6 to 10 percent; 29 percent of watershed with slope from 10 to 20 percent. Average slope, 12.7 percent.

Soil.—Predominating soil is Muskingum silt loam, an upland soil of residual origin derived from sandstone and shale. The surface soil is brown to yellowish brown, normally 6 to 8 inches in depth. The subsoil is yellowish brown, well drained, and contains occasional sandstone and shale fragments.

Erosion conditions.—Sheet erosion has removed 25 to 50 percent of the topsoil. There is no gully erosion. Erosional deposit at lower end of watershed covers 10 square feet.

Special features.—Lysimeter battery Y102 adjoins the watershed and is treated in a similar manner.

LAND USE:

Plan.—Crop rotation. Improved practices will begin in 1941.

MEASUREMENTS:

Precipitation.—Precipitation is measured at recording rain gage Y102. If this rain gage fails to operate, records are obtained from rain gage Y101 or the central meteorological station. Snowfall is measured in the rain gage supplemented by a snow board. Accumulated snow depth is observed regularly and core sampled when sufficiently deep.

Run-off.—Run-off is measured by type H measuring flume of 3-foot depth. The records of run-off are very good. Silt deposits cause inaccuracy of recession curves during major storms.

Silt loss.—Silt loss is measured by silt box and Ramser automatic silt sampler placed below the measuring flume.

Date	Rainfall						Run-off					Silt loss in run-off water	Remarks	
	Time began	Duration	Total amount	Intensity		Average rate for duration of rain-fall	Time rise began	Total amount	Maximum rate		Time of maximum rate			Period of rise
				Maximum for—										
				5-minute period	30-minute period									
January:		Hr. min.	In.	In. per hr.	In. per hr.	In. per hr.		In.	Sec.-ft.	In. per hr.		Hr. min.	Tons per acre	
1 to 29			0.36					0					0	July 11, 1938, cultivated.
29	2:00 a. m.	17 59	1.14	0.36	0.26	0.06		0					0	Sept. 23-27, 1938, corn harvested.
29 to 31			.14					0					0	Jan. 1-31, 1939, corn stubble 8 inches high; soil wet and soft.
Total			1.64					0					0	Snow on ground Jan. 13-29.
February:			0					0					0	Feb. 1-28, corn stubble 8 inches high; soil wet and soft.
1 to 2			.38	.24	.14	.05		0					0	Feb. 1-28, corn stubble 8 inches high; soil wet and soft.
2	2:15 a. m.	7 30	.33					0					0	Feb. 3, 15, 21, and 28, snow.
2 to 9			.55	.24	.16	.07		0					0	Feb. 3-5, 15-18, 21-25, snow on ground.
9	4:15 p. m.	8 20	0					0					0	Feb. 14, frost 1.7 inches.
10 to 14			1.16	.36	.34	.10		0					0	
14	8:30 p. m.	11 10	0					0					0	
15 to 19			.60	.84	.22	.15	5:38 a. m.	.03	0.011	0.006	8:00 a. m.	2 22	.003	
19	3:55 a. m.	4 7	.21					0					0	
20 to 25			.43	.24	.12	.05		0					0	
25	12:00 p. m.	8 50	0					0					0	
25 to 28			.27	.30	.20	.14		.03					.002	
28	2:38 a. m.	1 52												
Total			3.93					.06					.005	
March:			0					0					0	Corn stubble 8 inches high; soil wet and soft.
1 to 5			.30	.12	.08	.06		0					0	Do.
5	12:50 a. m.	4 50	0					0					0	Same as Mar. 5, except soil fairly wet and loose.
5 to 11			1.89	.96	.36	.08		0					0	Do.
11	5:10 a. m.	22 18	.28					0					0	
12 to 27			.30	.12	.10	.03		0					0	
27	5:00 a. m.	11 0	0					0					0	
27 to 29			.80	.36	.22	.07		0					0	
29	5:00 p. m.	11 42	0					0					0	
29 to 31								0					0	
Total			3.57					0					0	
April:			.09					0					0	Mar. 29 to Apr. 5, plowed.
1 to 5			.69	.24	.18	.06		0					0	Soil fairly wet, soft and loose.
5	10:30 p. m.	12 10	.06					0					0	
6 to 9			.30	.24	.14	.07		0					0	Soil wet, soft and loose.
9	11:10 p. m.	4 6	.31	.48	.12	.07		0					0	Do.
10	12:00 p. m.	4 6	.11					0					0	
11 to 14			.32	.36	.16	.07		0					0	Do.
14	5:46 p. m.	4 45	.36	.24	.16	.08		0					0	Soil wet, and soft.
15	2:50 p. m.	4 30	.22					0					0	
16			1.17	3.24	.62	.25		.03					.001	Do.
17	11:40 a. m.	4 39	.18					0					0	
17 to 30														
Total			3.81					.03					.001	
May:			.02					0					0	May 1-2, oats drilled.
1 to 8			.57	2.04	.36	.20		0					0	Soil fairly wet and soft.
8	9:10 p. m.	2 53	.01					0					0	Oats sprouting.
9 to 21														

TABLE 31.—Summary of rainfall, run-off, and silt loss, watershed 109, 1939—Continued

Date	Rainfall						Run-off						Silt loss in run-off water	Remarks
	Time begun	Duration	Total amount	Intensity			Time rise began	Total amount	Maximum rate		Time of maximum rate	Period of rise		
				5-minute period	30-minute period	Average rate for duration of rainfall								
May—Con.		Hr. min.	In.	In. per hr.	In. per hr.	In. per hr.		In.	Sec.-ft.	In. per hr.		Hr. min.	Tons per acre	
21	3:20 p. m.	25	0.40	1.92	0.56	0.96	11:50 p. m.	0.01	0.061	0.036	12:02 a. m.	12	.005	Oats 3 inches high; soil moist and soft.
21 to 28			0					0					0	
28	12:26 a. m.	12	.27	1.92	.54	1.35	12:37 a. m.	.006	.077	.045	12:45 a. m.	8	0	Oats 5 inches high; soil moist and crusted.
28 to 31			0					0					0	
Total			1.27					.02					.005	
June: 1 to 8			.43					0					0	
8	6:05 a. m.	1 11	.33	.96	.26	.28		.003						Oats 9 inches high; soil moist and soft. Oats 10 inches high; soil fairly wet and soft. Oats 12 inches high; soil fairly wet and soft. Oats 16 inches high; soil wet and soft. Oats 16 inches high; soil wet and soft. Oats soft dough stage, 26 inches high; soil fairly wet and soft. Do.
8 to 10			.19					0						
11	12:45 p. m.	1 2	.95	4.08	1.46	.94	1:00 p. m.	.26	3.54	2.08	1:10 p. m.	10	.659	
11 to 13			0					0					0	
13	7:42 a. m.	5 16	.85	.36	.34	.16	9:00 a. m.	.09	.19	.13			0	
13 to 18			0					0					0	
18	7:35 a. m.	14 25	2.83	.84	.72	.20	8:50 a. m.	.33	.777	.456	11:17 a. m.	2 27	.09	
20 to 22			.16					0					0	
22	11:50 a. m.	1 2	.50	1.38	.40	.48	12:00 m.	.003	.03	.02			0	
22 to 29			0					0					0	
29	1:40 p. m.	43	.30	1.32	.58	.42		0					0	
29 to 30			.03					0					0	
Total			6.57					.69					.749	
July: 1 to 4			0					0					0	Oats 26 inches high; soil fairly wet and soft. Same as July 4; approaching hard dough stage. Do. July 13, hard dough stage. Oats 26 inches high, hard dough stage; soil moist and soft. Same as July 18 except soil fairly wet and soft. Oats harvested; soil fairly wet and soft. Soil moist and soft. Soil fairly wet and soft.
4	9:52 p. m.	1 28	.79	4.08	1.30	.54	9:55 p. m.	.07	.922	.541	10:04 p. m.	9	.011	
4 to 6			0					0					0	
6	4:17 a. m.	41	.51	2.04	.74	.75	6:55 a. m.	.10	1.29	.757	7:06 a. m.	11	.031	
6 to 8			.06					0					0	
8	5:11 a. m.	2 37	2.48	4.56	1.88	.95	5:14 a. m.	1.11	3.41	2.00			.239	
9 to 18			0					0					0	
18	3:00 a. m.	6 20	.63	.36	.20	.10		0					0	
18 to 20			0					0					0	
20	4:22 p. m.	43	.65	2.40	1.34	.91	4:30 p. m.	.12	1.22	.72			.025	
20 to 26			0					0					0	
26	5:12 a. m.	38	.55	3.72	1.08	.87	5:17 a. m.	.06	.951	.558	5:26 a. m.	9	.008	
26 to 29			.18					0					0	
29	5:06 a. m.	3 24	.42	.72	.32	.12		0					0	
30	1:06 a. m.	44	.34	.84	.62	.46		0					0	
30 to 31			0					0					0	
Total			6.61					1.46					.314	
August: 1 to 13			.66					0					0	Oats stubble 6 inches high; soil fairly wet and soft.
13	1:10 p. m.	30	.36	1.08	.54	.72		0					0	
13 to 21			.30					0					0	
Total			1.32					0					0	
September: 1 to 29			.41					0					0	Plowed for wheat Aug. 29 to Sept. 18; soil dry and loose.
29	9:10 p. m.	1 50	.64	.48	.24	.35		0					0	
29 to 30			0					0					0	
Total			1.05					0					0	
October: 1 to 10			0					0					0	Sept. 29 and Oct. 2, wheat drilled and timothy broadcast. Wheat 1 inch high; soil dry and loose. Wheat 2 inches; soil dry and loose. Wheat 2 inches high; soil wet and loose.
10	4:32 p. m.	1 50	.38	.48	.36	.21		0					0	
10 to 25			.02					0					0	
25	12:21 a. m.	16 31	2.65	4.08	1.42	.16	8:20 a. m.	.12	.005	.003			.845	
27	4:03 a. m.	7 52	1.48	1.32	.92	.19	4:03 a. m.	.23	.803	.471	5:03 a. m.	1 0	0	
28 to 31			0					0					0	
Total			4.53					.35					.845	
November: 1 to 30			.54					0					0	
December: 1 to 2			0					0					0	Wheat growing 5 inches high; soil fairly wet and soft. Wheat semidormant 5 inches high; soil wet and soft.
2	10:00 a. m.	3 20	.39	.66	.38	.12		0					0	
2 to 13			.38					0					0	
13	1:40 a. m.	4 40	.34	.36	.14	.07		0					0	
13 to 31			.20					0					0	
Total			1.31					0					0	
Year			30.15					2.61					1.919	

TABLE 32.—Summary of rainfall, run-off, and silt loss, watershed 110, 1939

LOCATION: Latitude 40°21'58'', longitude 81°47'40''.

PHYSICAL CHARACTERISTICS:

Size.—Length of principal drainage, 325 feet. Area, 1.27 acres.

Shape factor.—0.52.

Slope.—35 percent of watershed with slope from 6 to 10 percent; 65 percent of watershed with slope from 10 to 20 percent. Average slope, 13.0 percent.

Soil.—Predominating soil is Keene silt loam, upland soil of residual origin derived largely from shale. The surface soil is brown to grayish brown, 6 to 8 inches in depth. The sub-soil is reddish brown to yellowish brown just below the surface soil. The texture is silt loam grading into silty clay loam and then into heavy silty clay. Slight mottling begins at a depth of 12 to 24 inches, below which is a layer of heavy silty clay with gray predominating. Shale and sandstone fragments occur throughout the profile but are not so numerous as in the Coshocton or Muskingum soils. Drainage is fair.

Erosion conditions.—Sheet erosion has removed 50 to 75 percent of the topsoil. There is no gully erosion. Erosional deposit at lower end of watershed covers 10 square feet.

LAND USE:

Plan.—Rotated crops, prevailing practices; similar to adjoining watershed 103.

MEASUREMENTS:

Precipitation.—Precipitation is measured at recording rain gage 107. If this rain gage fails to operate, records are obtained from rain gages Y102, 113, or the central meteorological station. Snowfall is measured in the rain gage supplemented by a snow board. Accumulated snow depth is observed regularly and core sampled when sufficiently deep.

Run-off.—Run-off is measured by type H measuring flume of 2.5-foot depth. The records of run-off are very good. Silt deposits cause inaccuracy of recession curves during major storms.

Silt loss.—Silt loss is measured by silt box and Ramser automatic silt sampler placed below the measuring flume.

Date	Rainfall						Run-off						Silt loss in run-off water ²	Remarks	
	Time began	Duration	Total amount	Intensity		Time rise began ¹	Total amount	Maximum rate		Time of maximum rate ¹	Period of rise				
				Maximum for—				Average rate for duration of rain-fall							
				5-minute period	30-minute period										
March:		Hr. min.	In. 0	In. per hr.	In. per hr.	In. per hr.		In.	Sec.-ft.	In. per hr.		Hr. min.	Tons per acre		
10.....			0					0							Corn stubble 8 inches high; soil wet and firm.
11.....	4:00 a. m.	9 40	.46	0.24	0.18	0.05		0							Do.
11 to 12.....			.04					0							
12.....	1:42 a. m.	6 17	.76	.48	.32	.12		0							
12.....	3:54 p. m.	4 46	.70	1.08	.44	.15		0							
12 to 27.....			.19					0							
27.....	4:50 a. m.	10 34	.44	.12	.10	.04		0							Corn stubble 8 inches high; soil fairly wet and firm.
27 to 30.....			.15					0							
30.....	3:40 a. m.	8 20	.76	.48	.28	.09	4:50 a. m.	.02	0.02	0.01					Corn stubble 8 inches high; soil wet and firm.
30 to 31.....			0					0							
Total.....			3.50					.02							
April:															
1 to 5.....			.04					0							Corn stubble 8 inches high; soil fairly wet and firm.
5.....	11:00 p. m.	11 10	.76	.24	.18	.07	5:25 a. m. (6)	.009	.01	.005	6:15 a. m. (6)	50			Corn stubble 8 inches high; soil wet and firm.
6 to 9.....			.08					0							
9.....	11:10 p. m.	3 30	.31	.24	.14	.09		0							
10.....			0					0							
11.....	12:10 a. m.	5 50	.37	.48	.12	.06	2:10 a. m.	.008	.01	.007	4:45 a. m.	2 35			Do.
11 to 15.....			.41					0							
15.....	2:40 p. m.	4 40	.40	.24	.20	.09	4:50 p. m.	.03	.02	.016	6:05 p. m.	1 15			Do.
16.....	11:40 a. m.	5 0	.23	.12	.08	.05	1:00 p. m.	.02	.01	.009	3:47 p. m.	2 47			Do.
17.....	11:42 a. m.	58	.08	.12	.10	.08	11:42 a. m.	.004	.01	.005	12:00 m.	18			Do.
17.....	10:51 p. m.	4 19	1.23	2.52	.60	.28	10:51 p. m.	.43	.46	.358					Apr. 24-26, plowed for oats.
18 to 30.....			.16					0							
Total.....			4.07					.50							
May:															
1 to 21.....			.75					0							May 10, oats sprouting.
21.....	11:45 p. m.	55	.46	1.92	.78	.50	11:46 p. m.	.03	.18	.143	11:52 p. m.	6			Oats growing, 3 inches high; soil moist and crusted.
22 to 31.....			.26					0							
Total.....			1.47					.03							
June:															
1 to 3.....			.28					0							Oats growing, 7 inches high; soil moist and soft.
3.....	8:36 p. m.	1 59	.28	.24	.20	.14		0							Soil moist and soft.
3 to 10.....			.50	.36	.12	.10		0							Soil fairly wet and soft.
10.....	12:40 p. m.	32	.74	3.48	1.44	1.38	12:58 p. m.	.32	2.98	.327	1:11 p. m.	13			Oats growing, 10 inches high; soil moist and soft.
11.....	1:13 a. m.	13	.18	1.56	.36	.83	1:13 a. m.	.01	.01	.009	1:50 a. m.	37			Oats growing, 14 inches high; soil moist and soft.
11 to 13.....			0					0							Oats growing, 14 inches high; soil moist and soft.
13.....	7:50 a. m.	4 50	1.05	.44	.38	.22	10:27 a. m.	0.20	.25	.195					Oats in milk stage, 18 inches high; soil fairly wet and soft.
13 to 18.....			0					0							
18.....	7:30 a. m.	16 34	3.20	1.08	.74	.19	8:00 a. m.	1.34	.88	.645					
18 to 22.....			.13					0							
22.....	11:48 a. m.	51	.56	1.68	.52	.65	12:00 m.	.19	1.23	.960					
22 to 30.....			.19					0							
Total.....			7.11					2.04							

¹ If different from date in column 1, date is in parentheses after the time.² Record began Sept. 1.

TABLE 32.—Summary of rainfall, run-off, and silt loss, watershed 110, 1939—Continued

Date	Rainfall						Run-off						Silt loss in run-off water	Remarks	
	Time began	Duration	Total amount	Intensity			Time rise began	Total amount	Maximum rate		Time of maximum rate	Period of rise			
				Maximum for—		Average rate for duration of rain-fall									
				5-minute period	30-minute period										
July:		Hr. min.	In.	In. per hr.	In. per hr.	In. per hr.		In.	Sec.-ft.	In. per hr.		Hr. min.	Tons per acre		
1 to 4			0.01					0							
4	9:51 p. m.	1 39	.79	3.60	1.28	0.48	9:55 p. m.	.21	1.58	1.234	10:01 p. m.	6		July 4-8, soft dough stage, 20 inches high; soil moist and soft.	
6	4:16 a. m.	1 2	.45	1.44	.52	.44	4:22 a. m.	.21	.82	.640					
6 to 8			0					0							
8	5:09 a. m.	2 13	2.67	4.63	1.86	1.22	5:12 a. m.	1.51	2.80	2.187					
8 to 18			0					0							
18	2:14 a. m.	7 26	.67	.36	.18	.09		0						July 12, hard dough stage, 28 inches high; 10 percent lodged.	
18 to 20			0					0							
20	4:23 p. m.	55	1.03	3.12	1.52	1.12	4:29 p. m.	.47	2.75	2.148				Oats mature, 28 inches high; soil moist and crusted.	
20 to 26			0					0						Oats mature, 28 inches high; soil moist and soft.	
26	5:13 a. m.	37	.52	2.88	1.02	.84	5:18 a. m.	.11	.79	6.18		7		July 24-25, oats cut and shocked.	
26 to 29			.16					0						Soil moist and soft.	
29	5:06 a. m.	4 4	.55	.96	.54	.14	7:00 a. m.	.12	.33	2.56				Soil fairly wet and soft.	
30	1:08 a. m.	38	.31	.96	.54	.49	1:10 a. m.	.08	.42	.327	1:21 a. m.	11			
30 to 31			0					0						Soil moist and soft. Soil fairly wet and soft.	
Total			7.16					2.71							
August:															
1 to 3			0					0							
3	9:30 a. m.	1 46	.28	3.96	.32	.16		0						Oats stubble 2 inches high; soil fairly wet and soft.	
3 to 8			.16					0							
8	6:18 a. m.	1 31	.27	1.56	.20	.18	6:25 a. m.	.03	.17	.134	6:32 a. m.	7		Oats stubble 3 inches high; soil fairly wet and soft.	
8 to 13			0					0						Oats stubble, 5 inches high; soil fairly wet and soft.	
13	1:00 p. m.	45	.38	.84	.32	.51	1:40 p. m.	.01	.09	.071	1:48 p. m.	8		Plowed for wheat.	
13 to 18			0					0							
18 to 25			.10					0							
25 to 31			.10					0							
Total			1.29					.04							
September:															
1 to 29			.45					0					0		
29	9:17 p. m.	8 53	.60	.84	.32	.07		0					0	Soil bare, dry, soft and loose.	
30			0					0					0		
Total			1.05					0					0		
October:															
1 to 10			0					0					0	Oct. 2-3, wheat and timothy drilled.	
10	4:20 p. m.	2 41	.42	.48	.38	.16		0					0	Wheat sprouting; soil dry and loose.	
10 to 25			.02					0					0	Wheat growing, 3 inches high.	
25	12:19 a. m.	14 47	1.98	1.56	.62	.18		0					0		
26	8:30 a. m.	2 40	.61	3.84	1.36	.27	8:37 a. m.	.31	.88	.685					
27	3:55 a. m.	11 38	1.53	1.44	1.06	.14	4:55 a. m.	.35	.04	.027	10:40 a. m.	5 45	3.436	(Soil fairly wet and loose.	
28 to 31			.06					0					0	(Soil wet and loose.	
Total			4.52					.66					3.436		
November:															
1 to 30			.76					0					0		
December:															
1 to 2			.23					0					0		
2	9:30 a. m.	3 30	.62	.72	.54	.18		0					0	Wheat growing, 5 inches high; soil fairly wet and soft.	
2 to 13			.12					0					0		
13	1:30 a. m.	4 8	.30	.24	.08	.07		0					0	Wheat growing, 5 inches high; soil wet and soft.	
13 to 31			.18					0					0		
Total			1.45					0					0		

TABLE 33.—Summary of rainfall and run-off, watershed 111, 1939

LOCATION: Latitude 40°22'04'', longitude 81°46'52''.

PHYSICAL CHARACTERISTICS:

Size.—Length of principal drainage, 475 feet. Area, 1.18 acres.

Shape factor.—0.23.

Slope.—Entire watershed with slope from 6 to 10 percent. Average slope, 7.52 percent.

Soil.—Predominating soil is Coshocton silt loam, an upland soil of residual origin derived from shale and sandstone. The surface soil is brown to grayish brown and has a depth of 6 to 8 inches. The subsoil is reddish brown to yellowish brown, ranging in texture from silt loam to silty clay loam. Mottling begins at a depth of from 24 to 36 inches. Drainage is fair to good. Shale and sandstone fragments occur in the profile.

Erosion conditions.—Sheet erosion has removed 25 to 50 per-

cent of the topsoil. There is no gully erosion. Erosional deposit at lower end of watershed covers 12 square feet.

LAND USE:

Plan.—Rotated crops, prevailing practices; similar to adjacent watershed 113.

MEASUREMENTS:

Precipitation.—Precipitation is measured at recording rain gage 109. If this rain gage fails to operate, records are obtained from gage 110 or 118. Snowfall is measured in the rain gage supplemented by a snow board. Accumulated snow depth is observed regularly and core sampled when sufficiently deep.

Run-off.—Run-off is measured by type H measuring flume of 2.5-foot depth. The records of run-off are very good. Silt deposits cause inaccuracy of recession curves during major storms.

Date	Rainfall						Run-off					Remarks		
	Time began	Duration	Total amount	Intensity			Time rise began	Total amount	Maximum rate		Time of maximum rate		Period of rise	
				Maximum for—		Average rate for duration of rain-fall								
				5-minute period	30-minute period									
August: 10 to 31		<i>Hr. min.</i>	<i>In.</i> 0.46	<i>In.</i> per hr.	<i>In.</i> per hr.	<i>In.</i> per hr.		<i>In.</i> 0	<i>Sec.-ft.</i>	<i>In.</i> per hr.		<i>Min.</i>	Antecedent rainfall 0.41 inch, Aug. 1-8; 0.35 inch. Aug. 7-8, plowed.	
September: 1 to 30	4:20 a. m.	4 0	.75 .34	0.18	0.12	0.08	0 0							Soil bare, dry, and loose.
Total			1.09				0							
October: 1 to 10			0 .35				0 0							
10	4:40 p. m.	2 5	0 .70	.48	.34	.17	0 0							
10 to 25			1.90				0							
25	12:25 a. m.	12 42	3.84	1.56	.48	.15	0							
26	8:36 a. m.	2 31	1.34	3.84	1.34	.29	0.09	0.69	0.575	8:50 a. m.	9			
27	4:03 a. m.	6 36	1.40	1.56	.92	.21	0.27	.64	.533	5:06 a. m.	21			
27 to 31			.01				0							
Total			4.36				.36							
November: 1 to 30			.51				0						Wheat 5 inches high; soil fairly wet and soft. Wheat 5 inches high; soil wet and soft.	
December: 1 to 2			.13 .44				0 0							
2	9:50 a. m.	3 0	.22	1.08	.44	.15	0							
2 to 13			.33				0							
13	1:50 a. m.	3 50	.33	.12	.12	.09	0							
13 to 31			.29				0							
Total			1.41				0							

TABLE 34.—Summary of rainfall and run-off, watershed 113, 1939

LOCATION: Latitude 40°22'05'', longitude 81°46'47''.

PHYSICAL CHARACTERISTICS:

Size.—Length of principal drainage, 375 feet. Area, 1.45 acres.

Shape factor.—0.45.

Slope.—61 percent of watershed with slope from 6 to 10 percent; 39 percent of watershed with slope from 10 to 20 percent. Average slope, 9.30 percent.

Soil.—Predominating soil is Coshocton silt loam, an upland soil of residual origin derived from shale and sandstone. The surface soil is brown to grayish brown and has a depth of 6 to 8 inches. The subsoil is reddish brown to yellowish brown, ranging in texture from silt loam to silty clay loam. Mottling begins at a depth of 24 to 36 inches. Shale and sandstone fragments occur in the profile. Drainage is fair to good.

Erosion conditions.—Sheet erosion has removed 50 to 75 percent of the topsoil. There are three shallow gullies with potholes,

the center gully being 12 inches deep at the outlet. Erosional deposit at lower end of watershed covers 6 square feet.

LAND USE:

Plan.—Rotated crops, similar to adjacent watershed 111. Improved practices will begin in 1941.

MEASUREMENTS:

Precipitation.—Precipitation is measured at recording rain gage 109. If this rain gage fails to operate, records are obtained from rain gage 110 or 118. Snowfall is measured in the rain gage supplemented by a snow board. Accumulated snow depth is observed regularly and core sampled when sufficiently deep.

Run-off.—Run-off is measured by type H measuring flume of 2.5-foot depth. The records of run-off are good. Silt deposits cause inaccuracies of recession curves during most storms. Changes in installation to counteract this are planned for 1940.

Date	Rainfall						Run-off					Remarks		
	Time began	Duration	Total amount	Intensity			Time rise began	Total amount	Maximum rate		Time of maximum rate		Period of rise	
				Maximum for—		Average rate for duration of rainfall								
				5-minute period	30-minute period									
August: 10 to 31		Hr. min.	In. 0.46	In. per hr.	In. per hr.	In. per hr.		In. 0	Sec.-ft.	In. per hr.		Min.	Antecedent rainfall 0.41 inch, Aug. 1-8; 0.35 inch, Aug. 8. Aug. 17-30, plowed.	
September: 1 to 30			.75					0						Soil bare, dry, and loose.
30	4:20 a. m.	4 0	.34	0.18	0.12	0.08		0						
Total			1.09					0						
October: 1 to 10			0					0						Oct. 3-4, wheat drilled. Soil bare, dry, and loose.
10	4:40 p. m.	2 5	.35	.48	.34	.17		0						
10 to 25			0					0						
25	12:25 a. m.	12 42	1.90	1.56	.48	.15		0						Oct. 25-27, wheat 2 inches high, soil loose; soil dry Oct. 25; fairly wet Oct. 26; wet Oct. 27
26	8:36 a. m.	2 31	.70	3.84	1.34	.29	8:42 a. m.	(1)	4.17	2.852	8:45 a. m.	3		
27	4:03 a. m.	6 36	1.40	1.56	.92	.21	4:04 a. m.	(1)	1.54	1.053				
27 to 31			.01					0						
Total			4.36											
November: 1 to 30			.51					0						
December: 1 to 2			.13					0						Wheat 4 inches high; soil fairly wet and soft. Wheat 5 inches high; soil wet and soft.
2	9:50 a. m.	3 0	.44	1.08	.44	.15		0						
2 to 13			.22					0						
13	1:50 a. m.	3 50	.33	.12	.12	.09		0						
13 to 31			.29					0						
Total			1.41					0						

¹ No record.

TABLE 35.—Summary of rainfall, run-off, and silt loss, watershed 115, 1939

LOCATION: Latitude 40°22'26", longitude 81°46'09".

PHYSICAL CHARACTERISTICS:

Size.—Length of principal drainage, 425 feet. Area, 1.61 acres.

Shape factor.—0.39.

Slope.—69 percent of watershed with slope less than 6 percent, 31 percent of watershed with slope from 6 to 10 percent. Average slope, 6.59 percent.

Soil.—Predominating soil is Muskingum silt loam, an upland soil of residual origin derived from sandstone and shale. The surface soil is brown to yellowish brown, normally 6 to 8 inches in depth. The subsoil is yellowish brown, well drained, and contains occasional sandstone and shale fragments.

Erosion conditions.—Sheet erosion has removed 50 to 75 percent of the topsoil. There is no gully erosion. Erosional deposit at lower end of watershed covers 15 square feet.

Special features.—Lysimeter battery Y103 adjoins watershed 123 and carries the same crop rotation.

LAND USE:

Plan.—Rotated crops; similar to adjacent watershed 123. Improved practices will begin in 1941.

MEASUREMENTS:

Precipitation.—Precipitation is measured at recording rain gage Y103. If this rain gage fails to operate, records are obtained from rain gage Y101 or the central meteorological station. Snowfall is measured in the rain gage supplemented by a snow board. Accumulated snow depth is observed regularly and core sampled when sufficiently deep.

Run-off.—Run-off is measured by type H measuring flume of 2.5-foot depth. The records of run-off are very good. Silt deposits cause inaccuracy of recession curves for major storms.

Silt loss.—Silt loss is measured by silt box and Ramser automatic silt sampler placed below the measuring flume.

Date	Rainfall						Run-off						Silt loss in run-off water ¹	Remarks
	Time began	Duration	Total amount	Intensity			Time rise began	Total amount	Maximum rate		Time of maximum rate	Period of rise		
				Maximum for—		Average rate for duration of rain-fall								
				5-minute period	30-minute period									
		Hr. min.	In.	In. per hr.	In. per hr.	In. per hr.		In.	Sec.-ft.	In. per hr.		Min.	Tons per acre	
April:														
1 to 5			0.03					0						
5	10:20 p. m.	11 20	.73	0.24	0.23	0.06		0						Corn stubble 8 inches high; soil wet and soft.
6 to 9			.10					0						
9	11:40 p. m.	2 50	.29	.12	.12	.10		0						Apr. 9-11, corn stubble 8 inches high; soil wet and soft.
10			0					0						
11	12:30 a. m.	4 0	.30	.36	.12	.08		0						
11 to 15			.32					0						Apr. 15-16, corn stubble 8 inches high; soil wet and soft.
15	2:46 p. m.	4 14	.38	.24	.21	.09		0						
16	12:30 p. m.	4 30	.31	.12	.10	.07		0						
16 to 17			.06					0						Corn stubble 8 inches high; soil wet and soft.
17	10:50 p. m.	4 0	1.19	3.00	.56	.30	10:52 p. m.	.47	0.69	0.422				Apr. 26-27, plowed.
18 to 30			.22					0						
Total			3.93					.47						
May:														
1 to 9			.33					0						May 2-3, oats drilled.
9	2:36 p. m.	34	.26	2.16	.46	.46		0						Soil bare, fairly wet and loose.
9 to 21			.22					0						
21	11:40 p. m.	43	.22	.96	.40	.31		0						Oats 3 inches high; soil moist and soft.
22 to 31			.22					0						
Total			1.25					0						
June:														
1 to 8			.23					0						
8	6:18 a. m.	2 12	.32	1.08	.30	.15		0						Oats 8 inches high; soil moist and soft.
8 to 10			.17					0						
10	12:37 p. m.	23	.79	5.40	1.58	2.06	12:56 p. m.	.20	3.04	1.873	1:09 p. m.	13		June 10-11, oats 9 inches high, soil soft; moist June 10, fairly wet June 11.
11	1:12 a. m.	12	.15	1.44	.30	.75	1:15 a. m.	.004	.02	.015	1:25 a. m.	10		
11 to 13			.10					0						Oats 12 inches high; soil fairly wet and soft.
13	7:52 a. m.	4 8	.80	.36	.32	.19	8:58 a. m.	.10	.17	.106				Oats 18 inches high; soil moist and soft.
13 to 18			0					0						
18	7:40 a. m.	18 27	3.17	.84	.68	.17	8:51 a. m.	.73	.91	.558				Oats 18 inches high; soil moist and soft.
18 to 22			.08					0						
22	11:58 a. m.	22	.21	.84	.38	.57	12:46 p. m.	.01	.13	.079	12:52 p. m.	6		June 22, oats 24 inches high; soil fairly wet and soft.
22	3:16 p. m.	31	.32	1.08	.38	.62	3:21 p. m.	.06	.31	.192	3:32 p. m.	11		
22 to 29			0					0						
29	1:50 p. m.	35	.40	1.56	.74	.69	1:56 p. m.	.03	.25	.154				Oats 26 inches high, soft dough stage; soil fairly wet and soft.
29 to 30			.03					0						
Total			6.77					1.13						

¹ Record began Sept. 1.

TABLE 35.—Summary of rainfall, run-off, and silt loss, watershed 115, 1939—Continued

Date	Rainfall						Run-off						Silt loss in run-off water	Remarks
	Time began	Duration	Total amount	Intensity			Time rise began	Total amount	Maximum rate		Time of maximum rate	Period of rise		
				Maximum for—		Average rate for duration of rainfall								
				5-minute period	30-minute period									
		Hr. min.	In.	In. per hr.	In. per hr.	In. per hr.		In.	Sec.-ft.	In. per hr.		Min.	Tons per acre	
July:														
1 to 4			0					0						
4 to 6	9:50 p. m.	1 30	.78	4.44	1.30	0.52	9:51 p. m.	.24	2.12	1.306	9:59 p. m.	8		Oats 26 inches high; soil moist and soft.
6	4:12 a. m.	18	.10	.72	.20	.33	4:17 a. m.	.006	.05	.033	4:24 a. m.	7		Oats 26 inches high; soil fairly wet and soft.
6 to 8	6:50 a. m.	30	.45	2.16	.90	.90	6:56 a. m.	.26	2.47	1.522	7:07 a. m.	11		
8	5:09 a. m.	11	.54	3.72	1.08	2.95	5:12 a. m.	.26	2.80	1.725	5:21 a. m.	9		Oats 26 inches high, soil soft; soil moist 5:09 a. m., wet 7:37 a. m., and 12:27 p. m.
8	7:37 a. m.	39	1.10	2.88	1.82	1.69	7:38 a. m.	.72	4.46	2.747	7:57 a. m.	19		
8	12:27 p. m.	1 47	.93	2.64	.84	.52	12:29 p. m.	.58	2.80	1.725	12:56 p. m.	27		
8 to 18			0					0						
18	3:00 a. m.	6 50	.67	.36	.20	.10		0						
18 to 20			0					0						
20	4:27 p. m.	28	.53	3.24	1.00	1.14	4:29 p. m.	.16	1.46	.899				July 18-20, oats 26 inches high; soil moist and crusted July 18, fairly wet and soft July 20.
20 to 26			0					0						July 24-25, oats cut.
26	5:15 a. m.	45	.55	3.96	1.06	.73	5:17 a. m.	.18	1.93	1.189	5:26 a. m.	9		July 26, oat stubble 6 inches high; soil moist and crusted July 20.
26	9:45 p. m.	10	.26	1.68	.52	1.56	9:46 p. m.	.11	1.13	.696	9:53 p. m.	7		July 26, oat stubble 6 inches high; soil fairly wet and soft.
26 to 29			.06					0						
29	5:10 a. m.	3 50	.53	.84	.44	.14	7:05 a. m.	.004	.01	.007	7:19 a. m.	14		July 29-30, oats stubble 6 inches high; soil soft; moist July 29, fairly wet July 30.
30	1:14 a. m.	36	.30	1.08	.50	.50	1:14 a. m.	.002	.01	.007	1:20 a. m.	6		
30 to 31			0					0						
Total			6.80					2.52						
August:														
1 to 8			.22					0						
8	6:18 a. m.	48	.39	2.16	.20	.49	6:23 a. m.	.005	.03	.018	6:28 a. m.	5		Oats stubble 6 inches high; soil fairly wet and soft.
8 to 13			.04					0						Do.
13	1:08 p. m.	1 5	.53	1.68	.34	.49	1:30 p. m.	.004	.01	.007				
13 to 31			.10					0						
Total			1.28					.01						
September:														
1 to 29			.41					0						Sept. 19-21, plowed.
29	9:25 p. m.	9 35	.72	1.08	.38	.08		0						Soil bare, dry and soft.
30			0					0						
Total			1.13					0						
October:														
1 to 10			0					0						Oct. 4-5, wheat drilled.
10	4:38 p. m.	2 10	.29	.36	.30	.13		0						Soil bare, dry and loose.
10 to 25			.06					0						
25	12:20 a. m.	16 11	2.12	1.44	.46	.13		0						Oct. 25-27, wheat 2 inches high, soil loose; soil dry
26	8:26 a. m.	2 1	.78	3.60	1.46	.39	8:37 a. m.	.43	4.31	2.655	8:47 a. m.	10	3.624	Oct. 25, wet Oct. 26 and 27.
27	4:04 a. m.	7 21	1.54	1.32	1.00	.21	4:53 a. m.	.86	1.38	.850	5:03 a. m.	10		
27 to 31			0					0					0	
Total			4.79					1.29					3.624	
November:														
1 to 30			.51					0						0
December:														
1 to 2			.17					0						0
2	9:30 a. m.	3 0	.47	.84	.46	.16		0						0
2 to 13			.14					0						0
13	2:00 a. m.	4 20	.31	.48	.18	.07		0						0
13 to 31			.21					0						0
Total			1.30					0						0

TABLE 36.—Summary of rainfall and run-off, watershed 121, 1939

LOCATION: Latitude 40°21'39'', longitude 81°48'02''.

PHYSICAL CHARACTERISTICS:

Size.—Length of principal drainage, 350 feet. Area, 1.42 acres.*Shape factor*.—0.51.*Slope*.—17 percent of watershed with slope from 6 to 10 percent; 53 percent of watershed, 10 to 20 percent; 30 percent of watershed with slope exceeding 20 percent. Average slope—15.8 percent.*Soil*.—Predominating soil is Muskingum loam, and upland soil derived largely from sandstone and lighter in texture throughout the profile than the Muskingum silt loam. It is rather shallow and contains numerous small sandstone fragments. The unweathered sandstone rock occurs at a depth of 18 to 30 inches.*Erosion conditions*.—Sheet erosion has removed 50 to 75 percent of the topsoil. One shallow gully, with potholes, and

numerous rills converge at outlet. Erosional deposit at lower end of watershed covers 12 square feet.

LAND USE:

Plan.—Rotated crops, similar to adjoining watershed 106.

Improved practices will begin in 1941.

MEASUREMENTS:

Precipitation.—Precipitation is measured at recording rain gage 113. If this rain gage fails to operate, records are obtained from rain gage 115 or 107. Snowfall is measured in the rain gage supplemented by a snow board. Accumulated snow depth is observed regularly and core sampled when sufficiently deep.*Run-off*.—Run-off is measured by type-H measuring flume of 2.5-foot depth. The records of run-off are poor because of frequent clogging of the flume with erosional debris. Changes in the installation to counteract this will be made during 1940.

Date	Rainfall						Run-off						Remarks
	Time began	Dura- tion	Total amount	Intensity			Time rise began	Total amount	Maximum rate		Time of maximum rate	Period of rise	
				Maximum for—		Aver- age rate for duration of rain- fall							
				5-min- ute period	30-min- ute period								
March: 27 to 30..... 30..... 30 to 31..... Total.....	3:00 a. m.....	Hr. min. 9 0	In. 0.17 .71 0										

¹ No record.

TABLE 36.—Summary of rainfall and run-off, watershed 121, 1939—Continued

Date	Rainfall						Run-off					Remarks		
	Time began	Duration	Total amount	Intensity			Time rise began	Total amount	Maximum rate		Time of maximum rate		Period of rise	
				Maximum for—		Average rate for duration of rainfall								
				5-minute period	30-minute period									
July:		Hr. min.	In.	In. per hr.	In. per hr.	In. per hr.		In.	Sec.-ft.	In. per hr.		Hr. min.		
1 to 4			0					0						
4 to 6	9:53 p. m.	1 47	.82	4.44	1.50	0.46	9:53 p. m.	.13	1.27	0.886	9:58 p. m.	5	Oats 22 inches high; soil moist and soft.	
6 to 8	4:14 a. m.	21	.25	1.32	.50	.71	4:21 a. m.	.07	.64	.444	4:28 a. m.	7	July 6, oats 22 inches high, soft dough stage; soil fairly wet and soft.	
8 to 10	6:43 a. m.	35	.23	1.20	.44	.40	6:55 a. m.	.04	.22	.155	7:11 a. m.	16	Do.	
10 to 12	5:14 a. m.	8	.28	2.04	.56	2.10		(1)						
12 to 14	7:40 a. m.	35	.85	2.52	1.40	1.46		(1)						
14 to 16	12:30 p. m.	1 17	.63	2.28	.92	.49		(1)						
16 to 18			0					0						
18 to 20	3:00 a. m.	6 50	.64	.24	.20	.09		0					Oats 24 inches high, hard dough stage; soil moist and firm.	
20 to 22			0					0					Do.	
22 to 24	4:25 p. m.	55	1.08	4.44	1.86	1.18	4:29 p. m.	.34	1.75	1.22			July 23-27, oats cut.	
24 to 26			0					0					Oats partly cut and shocked; soil fairly wet and firm.	
26 to 28	5:13 a. m.	37	.60	3.84	1.18	.97	5:16 a. m.	.13	1.42	.991	5:22 a. m.	6	July 29-30, oat stubble 6 inches high; soil firm, moist July 29, fairly wet July 30.	
28 to 30			.10					0						
30 to 31	5:10 a. m.	2 43	.68	1.52	.72	.25	7:11 a. m.	.02	.07	.052	7:23 a. m.	12		
	1:08 a. m.	37	.32	1.32	.56	.52	1:14 a. m.	.02	.10	.069	1:40 p. m.	26		
Total			6.48											
August:														
1 to 31			1.19					0						
September:														
1 to 29			.46					0						
29 to 30	9:20 p. m.	4 45	.64	.60	.50	.13		0					Aug. 24-Sept. 21, plowed. Soil bare, dry, and loose.	
Total			1.10					0						
October:														
1 to 10			0					0						
10 to 25	4:25 p. m.	1 47	.32	.36	.26	.18		0					Soil bare, dry, and loose.	
25 to 26			.08					0					Oct. 11-12, wheat drilled.	
26 to 27	12:17 a. m.	12 58	1.94	1.08	.42	.15		(1)					Oct. 25-27, soil bare and loose; dry Oct. 25, fairly wet Oct. 26, wet Oct. 27.	
27 to 28	8:25 a. m.	35	.49	2.52	.96	.84		(1)						
28 to 29	3:52 a. m.	5 3	1.35	1.68	1.02	.27		(1)						
29 to 31	1:27 p. m.	1 33	.17	1.08	.22	.11	1:37 p. m.	.07	1.13	.789	1:41 p. m.	4		
			.01					0						
Total			4.36											
November:														
1 to 30			.58					0						
December:														
1 to 2			.30					0						
2 to 13	9:50 a. m.	3 2	.39	.60	.36	.13		0					Wheat 4 inches high; soil fairly wet and soft.	
13 to 31	1:30 a. m.	4 20	.34	.36	.14	.08		0					Wheat 4 inches high; soil wet and soft.	
			.28					0						
Total			1.39					0						

¹ No record.

TABLE 37.—Summary of rainfall, run-off, and silt loss, watershed 123, 1939

LOCATION: Latitude 40°22'24", longitude 81°47'19".

PHYSICAL CHARACTERISTICS:

Size.—Length of principal drainage, 450 feet. Area, 1.37 acres.

Shape factor.—0.30.

Slope.—62 percent of watershed with slope less than 6 percent; 38 percent of watershed with slope from 6 to 10 percent.

Average slope, 5.8 percent.

Soil.—Predominating soil is Keene silt loam, an upland soil of residual origin derived largely from shale. The surface soil is brown to grayish brown, 6 to 8 inches in depth. The subsoil is reddish brown to yellowish brown just below the surface soil. The texture is silt loam grading into silty clay loam and then into heavy silty clay. Slight mottling begins at a depth of 12 to 24 inches below which is a layer of heavy silty clay with gray predominating. Shale and sandstone fragments occur throughout the profile but are not so numerous as in the Coshocton or Muskingum soils. Drainage is fair.

Erosion conditions.—Sheet erosion has removed 25 to 50 per-

cent of the topsoil. There is no gully erosion. Erosional deposit at lower end of watershed covers 15 square feet.

Special features.—Lysimeter battery Y103 adjoins this watershed and carries the same crop rotation.

LAND USE:

Plan.—Rotated crop, prevailing practices; similar to adjacent watershed 115.

MEASUREMENTS:

Precipitation.—Precipitation is measured at recording rain gage Y103. If this rain gage fails to operate, records are obtained from rain gage Y102 or the central meteorological station. Snowfall is measured in the rain gage supplemented by a snow board. Accumulated snow depth is observed regularly and core sampled when sufficiently deep.

Run-off.—Run-off is measured by type H measuring flume of 2.5-foot depth. The records of run-off are very good. Silt deposits cause inaccuracy of recession curves for major storms.

Silt loss.—Silt loss is measured by silt box and Ramser automatic silt sampler placed below the measuring flume.

Date	Rainfall						Run-off						Silt loss in run-off water ¹	Remarks
	Time began	Duration	Total amount	Intensity			Time rise began	Total amount	Maximum rate		Time of maximum rate	Period of rise		
				Maximum for—		Average rate for duration of rainfall								
				5-minute period	30-minute period									
		Hr. min.	In.	In. per hr.	In. per hr.	In. per hr.		In.	Sec.-ft.	In. per hr.		Min.	Tons per acre	
March:														
1 to 12			0.73					0						
12	1:40 a. m.	4 50	.74	0.96	0.44	0.15	3:44 a. m.	.04	0.03	0.022				Mar. 12, corn stubble 8 inches high; soil wet and firm.
12	3:48 p. m.	4 32	.71	.96	.42	.16	3:56 p. m.	.15	.13	.092	4:28 p. m.	32		
12 to 27			.19					0						Do.
27	5:30 a. m.	7 50	.36	.18	.14	.05		0						Do.
27 to 30			.15					0						
30	3:40 a. m.	6 30	.76	.36	.26	.12		0						
30 to 31			0					0						
Total			3.64					.19						
April:														
1 to 5			.03					0						
5	10:20 p. m.	11 20	.73	.24	.23	.06		0						Corn stubble 8 inches high; soil wet and soft.
6 to 9			.10					0						Do.
9	11:40 p. m.	2 50	.29	.12	.12	.10		0						Do.
10 to 11			0					0						
11	12:30 a. m.	4 0	.30	.36	.12	.08		0						Do.
11 to 15			.32					0						
15	2:46 p. m.	4 14	.38	.24	.21	.09		0						Do.
16	12:30 p. m.	4 30	.31	.12	.10	.07		0						Do.
16 to 17			.06					0						
17	10:50 p. m.	4 0	1.19	3.00	.56	.30	10:56 p. m.	.24	.09	.065	10:58 p. m.	2		Do.
18 to 30			.22					0						Apr. 26, 27, plowed.
Total			3.93					.24						
May:														
1 to 9			.33					0						
9	2:36 p. m.	34	.26	2.16	.46	.46		0						May 2, 3, oats drilled. Soil bare, fairly wet and loose.
9 to 21			.22					0						
21	11:40 p. m.	43	.22	.96	.40	.31		0						Oats 3 inches high; soil moist and soft.
22 to 31			.22					0						
Total			1.25					0						
June:														
1 to 8			.23					0						
8	6:18 a. m.	2 13	.32	1.08	.30	.15		0						Oats 8 inches high; soil moist and soft.
8 to 10			.17					0						
10	12:37 p. m.	23	.79	5.40	1.58	2.06	1:04 p. m.	.008	.12	.085	1:07 p. m.	3		June 10-11, oats 9 inches high; soil soft; soil moist on June 10, fairly wet June 11.
11	1:12 a. m.	12	.15	1.44	.30	.75		0						Oats 10 inches high; soil fairly wet and soft.
11 to 13			.10					0						
13	7:52 a. m.	4 8	.80	.36	.32	.19		0						
13 to 18			0					0						

¹ Record began Sept. 1.

TABLE 37.—Summary of rainfall, run-off, and silt loss, watershed 123, 1939—Continued

Date	Rainfall						Run-off						Silt loss in run-off water	Remarks
	Time began	Duration	Total amount	Intensity			Time rise began	Total amount	Maximum rate		Time of maximum rate	Period of rise		
				Maximum for—		Average rate for duration of rain-fall								
				5-minute period	30-minute period									
June—Con.		Hr. min.	In.	In. per hr.	In. per hr.	In. per hr.		In.	Sec.-ft.	In. per hr.		Min.	Tons per acre	
18	7:40 a. m.	4 57	1.54	0.84	0.68	0.30	8:55 a. m.	0.01	0.03	0.023			June 18, oats 18 inches high; soil soft, soil moist at 7:40 a. m., wet 4:45 p. m.	
18	4:45 p. m.	13 30	1.63	.36	.28	.12	6:45 p. m.	.03	.04	.025			Oats 24 inches high; soil fairly wet and soft.	
18 to 22			.29										Oats 26 inches high soft dough stage; soil fairly wet and soft.	
22	3:16 p. m.	31	.32	1.08	.38	.62	3:26 p. m.	.001	.02	.011				
22 to 29			0											
29	1:50 p. m.	35	.40	1.56	.74	.69		0						
29 to 30			.03											
Total			6.77					.05						
July														
1 to 4			0											
4	9:50 p. m.	1 30	.78	4.44	1.30	.52	9:55 p. m.	.007	.07	.054	10:00 p. m.	5	Oats 26 inches high; soil moist and soft.	
4 to 6			.10											
6	6:50 a. m.	30	.45	2.16	.90	.90	6:58 a. m.	.01	.12	.085	7:05 a. m.	7	Oats 26 inches high; soil fairly wet and soft.	
6 to 8			0											
8	5:09 a. m.	11	.54	3.72	1.08	2.95	5:15 a. m.	.01	.14	.100	5:22 a. m.	7	July 8, oats 26 inches high; soil soft, soil moist in the forenoon, wet in the afternoon.	
8	7:37 a. m.	39	1.10	2.88	1.82	1.69	7:38 a. m.	.29	1.58	1.144			July 18-20, oats 26 inches high; hard dough stage; soil moist and crusted July 18, fairly wet and soft July 20.	
8	12:27 p. m.	1 47	.93	2.64	.84	.52	12:32 p. m.	.45	1.46	1.057			July 24, oats cut.	
8 to 18			0											
18	3:00 a. m.	6 50	.67	.36	.20	.10		0					July 26, oat stubble 6 inches high; soil fairly wet and soft.	
18 to 20			0											
20	4:27 p. m.	28	.53	3.24	1.00	1.14		.005	.05	.038			Oats stubble 6 inches high; soil moist and soft.	
20 to 26			0					0						
26	5:15 a. m.	45	.55	3.96	1.06	.73		0						
26	9:45 p. m.	10	.26	1.68	.52	1.56		0						
26 to 29			.06					0						
29	5:10 a. m.	3 50	.53	.84	.44	.14		0						
30	1:14 a. m.	36	.30	1.08	.50	.50		0						
30 to 31			0					0						
Total			6.80					.77						
August:														
1 to 8			.22					0						
8	6:18 a. m.	48	.39	2.16	.20	.49		0					Oat stubble 6 inches high; soil fairly wet and soft.	
8 to 13			.04					0					Do.	
13	1:08 p. m.	1 5	.53	1.68	.34	.49		0						
13 to 31			.10					0						
Total			1.28					0						
September:														
1 to 29			.41					0					Sept. 19-21, plowed.	
29	9:25 p. m.	9 35	.72	1.08	.38	.08		0					Soil bare, dry, and soft.	
30			0					0						
Total			1.13					0					0	
October:														
1 to 10			0										Oct. 4, 5, wheat drilled.	
10	4:38 p. m.	2 10	.29	.36	.30	.13		0					Soil bare, dry, and loose.	
10 to 25			.06											
25	12:20 a. m.	16 11	2.12	1.44	.46	.13		0					Oct. 25-27, wheat 2 inches high; soil loose, soil dry	
26	8:26 a. m.	2 1	.78	3.60	1.46	.39	8:35 a. m.	.19	2.07	1.499	8:46 a. m.	11	.769	
27	4:04 a. m.	7 21	1.54	1.32	1.00	.21	4:10 a. m.	.17	.54	.393	5:07 a. m.	57	Oct. 25, wet Oct. 26 and 27.	
27 to 31			0											
Total			4.79					.36					.769	
November:														
1 to 30			.51					0					0	
December:														
1 to 2			.17					0					0	
2	9:30 a. m.	3 0	.47	.84	.46	.16		0					0	
2 to 13			.14					0					0	
13	2:00 a. m.	4 20	.31	.48	.18	.07		0					0	
13 to 31			.21					0					0	
Total			1.30					0					0	

TABLE 38.—Summary of rainfall, and run-off, watershed 124, 1939

LOCATION: Latitude 40°21'53'', longitude 81°46'43''.

PHYSICAL CHARACTERISTICS:

Size.—Length of principal drainage, 500 feet. Area, 2.07 acres.

Shape factor.—0.36.

Slope.—27 percent of watershed with slope from 6 to 10 percent; 57 percent of watershed, 10 to 20 percent; 16 percent of watershed with slope exceeding 20 percent. Average slope, 12.9 percent.

Soil.—Predominating soil is Coshocton silt loam, an upland soil of residual origin derived from shale and sandstone. The surface soil is brown to grayish brown and has a depth of 6 to 8 inches. The subsoil is reddish brown to yellowish brown, ranging in texture from silt loam to silty clay loam. Mottling begins at a depth of from 24 to 36 inches. Shale

and sandstone fragments occur in the profile. Drainage is fair to good.

Erosion conditions.—Sheet erosion has removed 50 to 75 percent of the topsoil. There is no gully erosion.

LAND USE:

Plan.—Meadow until 1940, after which it will be in rotated crops; prevailing practices.

MEASUREMENTS:

Precipitation.—Precipitation is measured at recording rain gage 110. If this rain gage fails to operate, records are obtained from rain gage 109 or 108. Snowfall is measured in the rain gage supplemented by a snow board. Accumulated snow depth is observed regularly and core sampled when sufficiently deep.

Run-off.—Run-off is measured by type H measuring flume of 2.5-foot depth. The records of run-off are excellent.

Date	Rainfall						Run-off						Remarks	
	Time began	Duration	Total amount	Intensity		Average rate for duration of rain-fall	Time rise began	Total amount	Maximum rate		Time of maximum rate	Period of rise		
				Maximum for—										
				5-minute period	30-minute period									
				In. per hr.	In. per hr.	In. per hr.		In. 0	Sec.-ft.	In. per hr.		Min.		
August: 13 to 21		Hr. min.	In. 0.08											Aug. 1-13, rainfall 1.30 inches.
September: 1 to 30														
30	4:20 a. m.	4 0	.75 .34	0.18	0.12	0.08		0 0						Grass 8 inches high; soil dry and hard.
Total			1.09					0						
October: 1 to 10			0					0						
10	4:20 p. m.	1 52	.35	.42	.32	.19		0						Grass dormant, 8 inches high; soil dry and crusted.
10 to 25			.01					0						
25	12:29 a. m.	13 28	1.84	1.08	.38	.14		0						Oct. 25-27, grass 8 inches high; soil soft; soil dry Oct. 25, fairly wet Oct. 26, wet Oct. 27.
26	8:44 a. m.	3 29	.50	1.32	.68	.14	8:44 a. m.	.03	0.35	0.166	8:51 a. m.	7		
27	4:02 a. m.	6 37	1.42	1.44	.96	.22	4:48 a. m.	.09	.35	.166	5:10 a. m.	22		
27 to 31			0					0						
Total			4.12					.12						
November: 1 to 30			.54					0						
December: 1 to 2			.16					0						
2	9:50 a. m.	3 0	.41	.84	.38	.14		0						Grass 4 inches high; soil fairly wet and soft.
2 to 13			.16					0						
13	2:30 a. m.	4 52	.32	.09	.10	.07		0						Grass 3 inches high; soil wet and soft.
13 to 31			.34					0						
Total			1.39					0						

TABLE 39.—Summary of rainfall, run-off, and silt loss, watershed 128, 1939

LOCATION: Latitude 40°21'41'', longitude 81°47'38''.

PHYSICAL CHARACTERISTICS:

Size.—Length of principal drainage, 400 feet. Area, 2.21 acres.

Shape factor.—0.60.

Slope.—24 percent of watershed with slope from 6 to 10 percent; 59 percent of watershed, 10 to 20 percent; 17 percent of watershed with slope exceeding 20 percent. Average slope, 13.6 percent.

Soil.—Predominating soil is Muskingum loam, an upland soil

derived largely from sandstone and lighter in texture throughout the profile than the Muskingum silt loam. It is rather shallow and contains numerous small sandstone fragments. The unweathered sandstone rock occurs at a depth of 18 to 30 inches.

Erosion conditions.—Sheet erosion has removed 50 to 75 percent of the topsoil. Numerous rills and five gullies 12 to 24 inches deep near lower end of watershed have great effect on concentration of flow. Erosional deposit at lower end of watershed covers 30 square feet.

TABLE 39.—Summary of rainfall, run-off, and silt loss, watershed 128, 1939—Continued

LAND USE:

Plan.—Rotated crops; improved practices after 1940.

MEASUREMENTS:

Precipitation.—Precipitation is measured at recording rain gage 115. If this rain gage fails to operate, records are obtained from rain gage 116 or 113. Snowfall is measured in the rain gage supplemented by a snow board. Accumu-

lated snow depth is observed regularly and core sampled when sufficiently deep.

Run-off.—Run-off is measured by type H measuring flume of 3-foot depth. The records of run-off are poor because of frequent clogging of the flume with erosional debris. Changes in the installation to counteract this will be made during 1940.

Silt loss.—Silt loss is measured by silt box and Ramser automatic silt sampler placed below the measuring flume.

Date	Rainfall						Run-off					Silt loss in run-off water ¹	Remarks	
	Time began	Duration	Total amount	Intensity		Time rise began	Total amount	Maximum rate	Time of maximum rate	Period of rise				
				Maximum for—										
				5-minute period	30-minute period						Average rate for duration of rain-fall			
		Hr. min.	In. 0	In. per hr.	In. per hr.	In. per hr.		In. 0	Sec.-ft.	In. per hr.		Min.	Tons per acre	
July: 1 to 4								0						June 22-30—amount of rain-fall 0.68 inches.
4	9:54 p. m.	1 46	.82	4.56	1.38	0.46	9:57 p. m.	.25	4.55	2.04	10:01 p. m.	4		Soybeans 9 inches high; soil moist and firm.
4 to 6			0					0						Soybeans 9 inches high; soil fairly wet and firm.
6	4:16 a. m.	24	.19	1.08	.38	.05	4:24 a. m.	.05	.92	.414	4:29 a. m.	5		
6	6:44 a. m.	26	.21	1.44	.42	.05	7:03 a. m.	.07	1.57	.705	7:09 a. m.	6		
6 to 8			0					0						
8	5:14 a. m.	8	.28	2.04	.56	2.10	5:15 a. m.	.15	3.10	1.39	5:19 a. m.	4		Soybeans 10 inches high, soil firm; soil moist at 5:14 a. m., wet at 7:40 a. m., and 12:30 p. m.
8	7:40 a. m.	35	.85	2.52	1.40	1.46	7:44 a. m.	.50	4.55	2.04				
8	12:30 p. m.	1 17	.63	2.28	.72	.49	12:31 p. m.	.40	3.35	1.50	12:35 p. m.	4		
8 to 18			0					0						
18	3:00 a. m.	6 40	.55	.18	.18	.08		0						Soybeans 14 inches high; soil moist and firm.
18 to 20			0					0						Soybeans 15 inches high; soil moist and firm.
20	4:25 p. m.	1 5	1.03	3.36	1.72	.95	4:29 p. m.	.54	5.70	2.559	4:35 p. m.	6		Soybeans 18 inches high; soil moist and firm.
20 to 26			.04					0						
26	5:13 a. m.	37	.60	3.84	1.18	.97	5:18 a. m.	.14	2.06	.925				Soybeans 20 inches high, soil firm; moist July 29; fairly wet July 30.
26 to 29			.04					0						
29	5:15 a. m.	2 29	.70	1.44	.82	.28	7:16 a. m.	.17	1.52	.682				
30	1:13 a. m.	33	.40	1.68	.76	.72	1:17 a. m.	.14	1.25	.561				
30 to 31			0					0						
Total			6.34					2.41						
August: 1 to 13			.53					0						Aug. 13, soybeans 28 inches high; soil fairly wet and hard.
13	1:10 p. m.	31	.42	2.64	.64	.84	1:41 p. m.	(2)	1.82	.817	1:44 p. m.	3		Aug. 25, soybeans cut.
13 to 31			.21					0						
Total			1.16					0						
September: 1 to 29			.48					0					0	Sept. 20-21, plowed.
29	9:20 p. m.	4 2	.64	.60	.48	.16		0					0	Soil bare, dry and loose.
29								0					0	
29 to 30			0					0					0	
Total			1.12					0					0	
October: 1 to 10			0					0					0	Soil bare, dry and loose.
10	4:45 p. m.	2 5	.34	.36	.28	.17		0					0	Oct. 11-12, wheat drilled.
10 to 25			0					0					0	Oct. 25-27, wheat 1 inch high, soil loose; soil dry 12:27 a. m. Oct. 25; fairly wet 1:10 p. m. and 9:40 p. m. Oct. 25 and 8:34 a. m. Oct. 26; wet Oct. 27.
25	12:27 a. m.	6 43	.43	1.32	.24	.06		0						
25	1:10 p. m.	5 25	1.13	.60	.46	.21	4:42 p. m.	.02	.38	.172				
25	9:40 p. m.	55	.23	1.08	.22	.25	10:35 a. m.	.02	.31	.140	10:43 p. m.	8	22.788	
26	8:34 a. m.	2 23	.53	2.40	1.00	.22	8:38 a. m.	(2)	6.11	2.743				
27	4:00 a. m.	3 29	1.07	1.44	.80	.31	4:05 p. m.	(2)	2.51	1.127				
27	12:30 p. m.	1 12	.24	1.20	.26	.20	1:39 p. m.	(2)	.572	.257				
27 to 31			0					0						
Total			3.97										22.788	
November: 1 to 30			.49					0					0	
December: 1 to 2			.14					0					0	Wheat 4 inches high; soil fairly wet and soft.
2	9:50 a. m.	2 40	.40	1.08	.44	.15		0					0	Wheat 5 inches high; soil wet and soft.
2 to 13			.18					0					0	
13	1:30 a. m.	4 20	.34	.36	.14	.08		0					0	
13 to 31			.13					0					0	
Total			1.19					0					0	

¹ Record began Sept. 1.² Record unsatisfactory.

TABLE 40.—Summary of rainfall, run-off, and silt loss, watershed 129, 1939

LOCATION: Latitude 40°22'21", longitude 81°47'51".

PHYSICAL CHARACTERISTICS:

Size.—Length of principal drainage, 525 feet. Area, 2.47 acres.

Shape factor.—0.39.

Slope.—15 percent of watershed with slope from 6 to 10 percent; 47 percent of watershed, 10 to 20 percent; 38 percent of watershed with slope exceeding 20 percent. Average slope, 18.6 percent.

Soil.—Predominating soil is Muskingum silt loam, an upland soil of residual origin derived from sandstone and shale. The surface soil is brown to yellowish brown color, normally about 6 to 8 inches in depth. The subsoil is yellowish brown, is well drained, and contains occasional sandstone and shale fragments usually increasing with depth.

Erosion conditions.—Sheet erosion has removed 25 to 50 percent of the topsoil. There is no gully erosion.

LAND USE:

Plan.—Single permanent grass cover, pastured. Improved practices will begin in 1940.

MEASUREMENTS:

Precipitation.—Precipitation is measured at recording rain gage 100. If this rain gage fails to operate, records are obtained from rain gage Y101 or Y102. Snowfall is measured in the rain gage supplemented by a snow board. Accumulated snow depth is observed regularly and core sampled when sufficiently deep.

Run-off.—Run-off is measured by Parshall measuring flume of 12-inch throat. The records of run-off are excellent.

Silt loss.—Silt loss is measured by silt box and Ramser automatic silt sampler placed below the measuring flume.

Date	Rainfall						Run-off						Silt loss in run-off water	Remarks
	Time began	Duration	Total amount	Intensity			Time rise began ¹	Total amount	Maximum rate		Time of maximum rate ¹	Period of rise		
				Maximum for—		Average rate for duration of rain-fall								
				5-minute period	30-minute period									
		Hr. min.	In.	In. per hr.	In. per hr.	In. per hr.		In.	Sec.-ft.	In. per hr.		Hr. min.	Tons per acre	
January:														
1 to 29			0.51					0					0	Jan. 1-31, pasture dormant, 2 inches high; soil wet and firm. Jan. 13, 16, 18, 20, 23, and 26, snow. Jan. 13-28, snow on ground.
29	2:30 a. m.	13 0	.46	0.12	0.08	0.04	12:42 a. m. (30)	0	0.03	0.01	3:10 a. m. (30)	2 28	0	
29	11:30 p. m.	5 10	.78	.48	.32	.15		.03					0	
30 to 31			.12					0					0	
Total			1.87					.03					0	
February:														Feb. 1-28, dormant, 2 inches high; soil wet and firm. Feb. 3, 15, 21, and 23, snow. Feb. 3-5, 16-18, 21-25, snow on ground.
1 to 2			0					0					0	
2	2:00 a. m.	8 35	.37	.12	.08	.43		0					0	
2 to 14			.81					0					0	
14	8:30 p. m.	12 10	1.48	.60	.40	.12	9:20 p. m.	.06	.07	.03	3:00 a. m. (15)	5 40	.001	
15 to 19			0					0					0	
19	3:55 a. m.	2 25	.26	.72	.20	.11		0					0	
20	12:04 a. m.	1 46	.33	.72	.20	.19		0					0	
21	10:00 a. m.	6 20	.38	.24	.08	.06		0					0	
21 to 25			0					0					0	
26	12:01 a. m.	6 30	.39	.24	.12	.06	12:30 a. m.	.007	.01	.006	1:00 a. m.	30	0	
26 to 28			.04					0					0	
28	2:54 a. m.	1 41	.21	.24	.17	.12	3:15 a. m.	.07	.05	.02	5:50 a. m.	2 35	0	
Total			4.27					.14					.001	
March:														Dormant 2 inches high; soil wet and firm. Do. Do. Dormant 2 inches high; soil fairly wet and firm.
1 to 5			0					0					0	
5	12:50 a. m.	4 10	.25	.12	.08	.06		0					0	
5 to 12			.43					0					0	
12	1:40 a. m.	4 42	.74	1.20	.44	.16		0					0	
12	3:48 p. m.	4 32	.77	.96	.54	.17	4:30 p. m.	.05	.09	.03			.002	
12 to 27			.19					0					0	
27	4:52 a. m.	11 20	.42	.24	.10	.04		0					0	
27 to 30			.08					0					0	
30	3:40 a. m.	8 0	.68	.36	.22	.09		0					0	
30 to 31			0					0					0	
Total			3.56					.05					.002	
April:														Do. April 6 to 19 dormant 2 inches high; soil wet and firm.
1 to 5			.06					0					0	
5	11:00 p. m.	10 40	.72	.24	.20	.07		0					0	
6 to 9			.12					0					0	
9	11:40 p. m.	3 10	.28	.12	.14	.09		0					0	
11	12:10 a. m.	3 4	.32	.60	.12	.10		0					0	
11 to 14			.05					0					0	
14	6:00 p. m.	5 21	.31	.24	.12	.06		0					0	
15	2:50 p. m.	4 30	.38	.24	.22	.08		0					0	
15 to 17			.34					0					0	
17	10:54 p. m.	1 13	.76	3.72	.64	.62	11:30 p. m.	.03	.08	.03	12:05 a. m. (18)	35	.001	
18	3:18 a. m.	3 16	.46	.36	.30	.14	3:20 a. m.	.03	.06	.02	4:45 a. m.	1 25		
18 to 30			.17					0					0	
Total			3.97					.06					.001	
May:														Growing 5 inches high; soil fairly wet and firm.
1 to 9			.10					0					0	
9	4:14 a. m.	1 58	.51	2.04	.46	.26		0					0	
9 to 21			.11					0					0	

¹ If different from date in column 1, date is in parentheses after the time.

TABLE 40 Summary of rainfall, run-off, and silt loss, watershed 120, 1939—Continued

Date	Rainfall						Run-off						Silt loss in run-off water	Remarks	
	Time began	Time ended	Total amount	Intensity			Time also began	Total amount	Maximum rate		Time of maximum rate	Period of rise			
				In minutes period	In minutes period	Average rate for the falling fall			Sec. ft.	In per hr.					
May—June 31 32 to 31	11:40 p. m.	11:54	In 0.25 30	In per hr. 1.50	In per hr. 0.48	In per hr. 0.20	In 0 0						0	Growing 5 inches high, soil moist and hard.	
Total			1.17				0							0	
June 1 to 10			05				0							0	May 26 to June 10, heavily grazed.
10	12:47 p. m.	41	72	4.02	1.40	1.05	12:58 p. m.	003	0.01	0.01	1:00 p. m.	12	0	0	Flowering stage, 18 inches high, soil moist and firm.
10 to 13	7:40 a. m.	4:30	03	03	30	21	8:40 a. m.	01	01	001	12:00 m.	3:20	0	0	Do.
13 to 18	7:30 a. m.	5:30	0.26	81	70	23	12:45 p. m.	02	03	03	12:40 p. m.	25	0	0	Do.
18	2:50 p. m.	0:30	1.20	30	22	43		0					0	0	Same as June 10, except soil wet and firm.
18 to 22			00					0					0	0	Flowering stage, 23 inches high; soil fairly wet and firm.
22	11:52 a. m.	1:03	41	30	34	34		0					0	0	Flowering stage, 24 inches high, soil moist and firm.
22 to 29	1:38 p. m.	27	40	1.44	30	30		0					0	0	
29			02					0					0	0	
Total			0.32					03						0	
July 1 to 4			0					0						0	July 1-31, heavily grazed.
4	0:50 a. m.	1:23	75	3.90	1.20	54		0						0	July 4-8, seed stage 18 inches high; soil moist and firm on July 4, fairly wet and firm on July 6, moist and firm before first storm on July 8, wet and firm during second and third storms of July 8.
4 to 8			0					0						0	
8	1:24 a. m.	20	00	0.02	0.09	0.05		0						0	
8 to 9	5:05 a. m.	05	50	1.30	1.12	2.24	5:41 a. m.	003	03	01	5:45 a. m.	4	004	0	
9	7:34 a. m.	53	1.01	2.04	1.44	1.05	7:30 a. m.	14	1.41	45	8:03 a. m.	27	003	0	
9 to 18	12:20 p. m.	2:24	05	0.80	0.64	40	12:26 p. m.	23	1.57	63				0	
18	2:50 a. m.	7:43	00	30	15	10		0						0	Seed stage, 16 inches high; soil moist and firm.
18 to 20			0					0						0	
20	4:24 p. m.	40	40	2.16	74	60		0						0	Seed stage, 16 inches high; soil fairly wet and firm.
20 to 23			0					0						0	
23	8:04 a. m.	30	57	3.72	0.44	95		0						0	Same as July 20.
23 to 29	0:50 p. m.	10	12	3.24	0.61	1.02		0						0	
29	8:00 a. m.	3:40	37	60	25	10		0						0	July 29-30, seeds shattering, soil moist and firm, July 29, fairly wet and firm, July 30,
30	1:00 a. m.	50	25	84	40	30		0						0	
31			0					0						0	
Total			0.27					37						007	
August 1 to 8			24					0						0	
8	0:11 p. m.	30	34	2.40	48	08		0						0	Seeds shattering, 8 inches high; soil fairly wet and firm.
8 to 13			0					0						0	
13	1:00 p. m.	48	48	1.02	36	60		0						0	Seeds shattered, 20 inches high; soil fairly wet and firm.
13 to 31			26					0						0	
Total			1.32					0						0	
September 1 to 29			37					0						0	
29	0:10 p. m.	8:40	07	60	28	08		0						0	Seedling, 3 inches high; soil dry and loose.
29 to 30			0					0						0	
Total			0.04					0						0	
October 1 to 10			0					0						0	Oct. 1-20, heavily grazed.
10	4:43 p. m.	1:33	33	48	32	24		0						0	Seedling, 4 inches high; soil dry and hard.
10 to 23			03					0						0	
23	12:21 a. m.	10:44	1.84	1.08	42	14		0						0	Oct. 25-27, dormant, 2 inches high; soil dry and hard on Oct. 25, fairly wet and soft on Oct. 26, and soft and wet on Oct. 27.
23 to 27	8:45 a. m.	3:33	71	84	44	20	8:35 a. m.	00	0.00	44	8:44 a. m.	8	002	0	
27	8:00 a. m.	0:51	1.30	1.32	84	13	1:07 a. m.	04	0.19	03	5:11 a. m.	4	005	0	
27 to 31			01					0						0	
Total			4.22					40						007	
November 1 to 30			52					0						0	
December 1 to 2			10					0						0	Dormant, 2 inches high; soil fairly wet and soft.
2	0:50 a. m.	3:21	38	60	34	11		0						0	
2 to 13			20					0						0	
13	2:00 a. m.	4:0	31	24	14	08		0						0	Dormant, 2 inches high; soil wet and soft.
13 to 31			30					0						0	
Total			1.45					0						0	
Year			35.88					78						.048	

TABLE 41.—Summary of rainfall, run-off, and silt loss, watershed 130, 1939

LOCATION: Latitude 40°22'15", longitude 81°47'59".

PHYSICAL CHARACTERISTICS:

Size.—Length of principal drainage, 550 feet. Area, 1.63 acres.*Shape factor*.—0.23.*Slope*.—27 percent of watershed with slope from 10 to 20 percent; 73 percent of watershed with slope exceeding 20 percent. Average slope, 21.7 percent.*Soil*.—Predominating soil is Muskingum silt loam, an upland soil of residual origin derived from sandstone and shale. The surface soil is brown to yellowish brown, normally about 6 to 8 inches in depth. The subsoil is yellowish brown, is well drained, and contains occasional sandstone and shale fragments.*Erosion conditions*.—Sheet erosion has removed 50 to 75 percent of the topsoil. There is no gully erosion.

LAND USE:

Plan.—Single, permanent grass cover; meadow, prevailing practice.

MEASUREMENTS:

Precipitation.—Precipitation is measured at recording rain gage 103. If this rain gage fails to operate, records are obtained from rain gages 100 or Y102. Snowfall is measured in the rain gage supplemented by a snow board. Accumulated snow depth is observed regularly and core sampled when sufficiently deep.*Run-off*.—Run-off is measured by Parshall measuring flume of 9-inch throat. The records of run-off are excellent.*Silt loss*.—Silt loss is measured by silt box and Ramser automatic silt sampler placed below the measuring flume.

Date	Rainfall						Run-off						Silt loss in run-off water	Remarks
	Time began	Duration	Total amount	Intensity			Time rise began ¹	Total amount	Maximum rate		Time of maximum rate ¹	Period of rise		
				5-minute period	30-minute period	Average rate for duration of rainfall			Sec.-ft.	In. per hr.				
January:		<i>Hr. min.</i>	<i>In.</i>	<i>In. per hr.</i>	<i>In. per hr.</i>	<i>In. per hr.</i>		<i>In.</i>	<i>Sec.-ft.</i>	<i>In. per hr.</i>		<i>Hr. min.</i>	<i>Tons per acre</i>	
1 to 29			0.36					0					0	June 30, 1938, hay cut.
29	2:30 a. m.	13 10	.39	0.12	0.08	0.03	12:49 p. m.	.01	0.02	0.01	1:20 p. m.	31	0	Permanent meadow, timothy, weeds and clover dormant, 3 inches high; soil wet and firm.
29	11:30 p. m.	4 42	.61	.24	.24	.13		0					0	Jan. 13, 16, 18, 20, 23, and 26, snow.
30			0				1:07 a. m.	.08	.05	.03	2:50 a. m.	1 43	0	Jan. 13-28 snow on ground.
30 to 31			.17					0					0	
Total			1.53					.09					0	
February:														
1 to 2			0					0					0	Feb. 1-28, meadow dormant, 3 inches high; soil wet and firm.
2	2:30 a. m.	7 40	.38	.24	.14	.05		0					0	Feb. 3, 15, 21, and 23, snow.
2 to 9			.36					0					0	Feb. 3-5, 15-18, 21-25, snow on ground.
9	4:30 p. m.	6 30	.45	.24	.16	.07		0					0	
9 to 14			0					0					0	
14	8:30 p. m.	13 55	1.37	.48	.36	.10	1:22 a. m. (15)	.13	.12	.07	3:00 a. m. (15)	1 38	.002	
15 to 20			.22					0					0	
20	12:04 a. m.	2 26	.33	.36	.22	.14	1:49 a. m.	.004	.01	.01	1:55 a. m.	6	0	
21	10:30 a. m.	6 40	.27	.24	.06	.04		0					0	
21 to 28			.32					0					0	
28	2:48 a. m.	2 24	.20	.24	.14	.08	4:04 a. m.	.02	.02	.01	4:40 a. m.	36	0	
Total			3.90					.15					.002	
March:														
1 to 11			.21					0					0	Mar. 1-30, meadow dormant, 3 inches high; soil wet and firm, except Mar. 12-27 when soil was fairly wet.
11	5:14 a. m.	6 42	.37	.36	.16	.06		0					0	
12	1:39 a. m.	4 42	.65	1.20	.40	.14	4:25 a. m.	.11					.001	
12	3:10 p. m.	5 30	.72	.72	.46	.13	3:52 p. m.	.05					0	
12 to 27			.32					0					0	
27	4:50 a. m.	8 20	.35	.12	.10	.04		0					0	
27 to 30			.08					0					0	
30	3:27 a. m.	8 3	.69	.36	.22	.09	7:42 a. m.	.006	.01	.005	8:00 a. m.	18	0	
Total			3.39					.17					.001	
April:														
1 to 5			.04					0					0	Apr. 1-18, meadow dormant, 3 inches high; soil wet and firm except on Apr. 5 when soil was fairly wet.
5	11:50 p. m.	8 50	.69	.24	.16	.08		0					0	
6 to 9			.13					0					0	
9	11:50 p. m.	3 10	.25	.36	.14	.08		0					0	
11	12:40 a. m.	3 43	.30	.48	.10	.08		0					0	
11 to 15			.35					0					0	
15	2:40 p. m.	3 55	.33	.24	.22	.08	6:07 p. m.	.006	.01	.005	7:00 p. m.	53	0	
15 to 17			.31					0					0	
17	10:49 p. m.	3 53	1.12	3.36	.58	.29	10:56 p. m.	.20					.003	
18 to 30			.16					0					0	
Total			3.68					.21					.003	
May:														
1 to 8			.07					0					0	Plants growing, 7 inches high; soil fairly wet and firm.
8	9:20 p. m.	2 44	.55	2.40	.42	.20		0					0	Plants growing, 7 inches high; soil fairly wet and hard.
9 to 21			.04					0					0	
21	3:20 p. m.	2 8	.34	1.92	.58	.16		0					0	
21 to 31			.23					0					0	
Total			1.23					0					0	

¹ If different from date in column 1, date is in parentheses after the time.

TABLE 41.—Summary of rainfall, run-off, and silt loss, watershed 130, 1939—Continued

Date	Rainfall						Run-off					Silt loss in run-off water	Remarks	
	Time began	Duration	Total amount	Intensity			Time rise began ¹	Total amount	Maximum rate		Time of maximum rate			Period of rise ¹
				Maximum for—	Average rate for duration of rainfall	Maximum rate								
									5-minute period	30-minute period				
		Hr. min.	In.	In. per hr.	In. per hr.	In. per hr.		In.	Sec. ft.	In. per hr.		Hr. min.	Tons per acre	
June:														
1 to 10			0.93					0					0	
10	12:44 p. m.	26	.78	5.16	1.56	1.80	1:00 p. m.	.005	0.08	0.05	1:10 p. m.	10	0	
10 to 13			.19					0					0	
13	7:45 a. m.	4 25	.86	.60	.36	.20		0					0	
13 to 18			0					0					0	
18	7:32 a. m.	5 23	1.18	.84	.68	.22	11:12 a. m.	.01	.04	.02	11:30 a. m.	18	0	
18			.22					0					0	
18 to 22	9:30 p. m.	3 40	.89	1.68	.46	.241	2:23 a. m. (19)	.02	.02	.01	12:29 a. m. (19)	6	0	
19 to 22			.24					0					0	
22	12:02 p. m.	15	.28	1.20	.56	1.12		0					0	
22 to 29			.20					0					0	
29	1:46 p. m.	34	.33	1.26	.64	.58		0					0	
29 to 30			.02					0					0	
Total			6.12					.04					0	
July:														
1 to 4			0					0					0	
4	9:50 p. m.	1 30	.72	3.12	1.20	.48		0					0	
6	4:14 a. m.	48	.47	1.32	.62	.59		0					0	
8	5:07 a. m.	13	.66	3.60	1.32	3.04	5:17 a. m.	.01	.14	.09	5:19 a. m.	2	0	
8	7:10 a. m.	1 5	1.07	3.12	2.00	.99	7:48 a. m.	.26	1.16	.71	8:03 a. m.	15	0	
8	12:20 p. m.	43	.87	3.48	1.06	1.21	12:36 p. m.	.24	.81	.49	1:06 p. m.	30	.004	
8 to 18			0					0					0	
18	3:00 a. m.	6 20	.52	.24	.16	.08		0					0	
20	4:24 p. m.	41	.64	2.76	1.20	.94		0					0	
20 to 26			0					0					0	
26	5:12 a. m.	28	.51	3.84	1.02	1.09		0					0	
26 to 29			.15					0					0	
29	5:10 a. m.	3 15	.37	1.08	.22	.11		0					0	
29 to 31			.24					0					0	
Total			6.22					.51					.004	
August:														
1 to 8			.24					0					0	
8	6:19 a. m.	36	.33	2.28	.48	.55		0					0	
8 to 13			0					0					0	
13	1:00 p. m.	38	.46	1.32	.36	.73		0					0	
13 to 31			.31					0					0	
Total			1.34					0					0	
September:														
1 to 29			.40					0					0	
29	9:10 p. m.	6 20	.65	.72	.36	.10		0					0	
29 to 30			0					0					0	
Total			1.05					0					0	
October:														
1 to 10			0					0					0	
10	5:20 p. m.	1 30	.32	.48	.34	.21		0					0	
10 to 25			0					0					0	
25	12:16 a. m.	14 32	1.90	1.32	.44	.13		0					0	
26	8:32 a. m.	38	.72	4.32	1.42	1.14	8:36 a. m.	.04	.46	.28	8:41 a. m.	5	0	
27	4:05 a. m.	4 26	1.90	2.04	1.42	.43	4:49 a. m.	.02	.13	.08	5:03 a. m.	14	0	
27 to 31			.31					0					0	
Total			5.15					.06					0	
November:														
1 to 30			.52					0					0	
December:														
1 to 2			.12					0					0	
2	9:40 a. m.	3 30	.36	.48	.32	.10		0					0	
2 to 13			.31					0					0	
13	1:40 a. m.	3 54	.31	.42	.10	.08		0					0	
13 to 31			.38					0					0	
Total			1.48					0					0	
Year			35.09					1.23					.010	

¹ If different from date in column 1, date is in parentheses after the time.

TABLE 42.—Summary of rainfall, run-off, and silt loss, watershed 131, 1939

LOCATION: Latitude 40°22'11", longitude 81°48'13".

PHYSICAL CHARACTERISTICS:

Size.—Length of principal drainage, 575 feet. Area, 2.21 acres.

Shape factor.—0.29.

Slope.—Entire watershed with slope exceeding 20 percent. Average slope, 21.6 percent.

Soil.—Predominating soil is Muskingum loam, an upland soil derived largely from sandstone and lighter in texture throughout the profile than the Muskingum silt loam. It is rather shallow and contains numerous small sandstone fragments. The unweathered sandstone rock occurs at a depth of 18 to 30 inches.

Erosion conditions.—There is no apparent erosion on this watershed.

Special features.—Twenty-three nonrecording rain gages and three recording rain gages are located in this watershed

in a study of interception. A series of trees of various sizes and species are also equipped with collars and tanks for measurement of stem flow.

LAND USE:

Plan.—Permanent woodland cover, improved practices.

MEASUREMENTS:

Precipitation.—Precipitation is measured at recording rain gage 145. If this rain gage fails to operate records are obtained from gage 146 or 102. Snowfall is measured in the rain gage supplemented by a snow board. Accumulated snow depth is observed regularly and core sampled when sufficiently deep.

Run-off.—Run-off is measured by Parshall measuring flume of 6-inch throat. The records of run-off are excellent.

Silt loss.—Silt loss is measured by silt box and Ramser automatic silt sampler placed below the measuring flume.

Ground-water levels.—Observation well 157 indicates the fluctuation of the ground-water table below this watershed.

Date	Rainfall						Run-off						Silt loss in run-off water	Remarks	
	Time began	Duration	Total amount	Intensity		Time rise began ¹	Total amount	Maximum rate		Time of maximum rate ¹	Period of rise				
				Maximum for—											
				5-minute period	30-minute period							Average rate for duration of rain-fall			
		Hr. min.	In.	In. per hr.	In. per hr.	In. per hr.		In.	Sec.-ft.	In. per hr.		Hr. min.	Tons per acre		
January:															
1 to 12			0.07					0					0	Jan. 1-31, trees dormant; soil wet and soft. Jan. 13, 16, 18, 20, 23, and 26, snow. Jan. 13-22, snow on ground.	
13	12:01 a. m.	13 0	.64	0.24	0.14	0.05		0					0		
13 to 29			.46					0					0		
29	2:00 a. m.	21 50	1.50	.36	.30	.07		0					0		
30 to 31			0					0					0		
Total			2.67					0					0		
February:															
1 to 2			0					0					0	Feb. 1-28, trees dormant; soil wet and soft. Feb. 3, 15, 21, and 28, snow. Feb. 3-5, 15-18, 21-25, snow on ground.	
2	2:30 a. m.	17 20	.65	.36	.12	.04		0					0		
3 to 9			.11					0					0		
9	2:00 p. m.	9 5	.54	.48	.22	.06		0					0		
10 to 14			0					0					0		
14	8:30 p. m.	14 45	1.36	.48	.40	.09	11:00 p. m.	.02	0.04	0.02	2:29 a. m. (15)	3 29	0		
14 to 19			0					0					0		
19	4:10 a. m.	1 40	.24	.72	.22	.14		0					0		
20	12:10 a. m.	2 50	.27	.72	.24	.10		0					0		
21	10:20 a. m.	7 5	.37	.12	.10	.05		0					0		
21 to 26			0					0					0		
26	1:00 a. m.	11 55	.55	.24	.14	.05		0					0		
26 to 28			0					0					0		
28	2:40 a. m.	2 30	.26	.36	.20	.10		0					0		
Total			4.35					.02					0		
March:															
1 to 11			.25					0					0		Mar. 1-31, trees dormant; soil wet and soft.
11	5:12 a. m.	18 49	1.97	1.08	.54	.10	6:13 a. m. (12)	.06	.028	.013			.001		
12 to 27			.19					0					0		
27	3:13 a. m.	10 53	.46	.24	.12	.04		0					0		
27 to 29			.02					0					0		
29	4:30 p. m.	13 29	.83	.48	.24	.06		0					0		
29 to 31			0					0					0		
Total			3.72					.06					.001		
April:															
1 to 5			.09					0					0	Apr. 1-30 same as Mar. 1-31.	
5	11:00 p. m.	11 20	.69	.24	.16	.06		0					0		
6 to 9			.11					0					0		
9	11:30 p. m.	3 10	.26	.24	.12	.08		0					0		
10 to 11			0					0					0		
11	12:05 a. m.	4 15	.30	.48	.14	.07		0					0		
11 to 14			.05					0					0		
14	6:05 p. m.	4 35	.31	.24	.16	.07		0					0		
15	2:50 p. m.	4 40	.38	.24	.20	.08		0					0		
16	11:35 a. m.	6 5	.35	.12	.08	.06		0					0		
17			.08					0					0		
17	10:49 p. m.	6 41	1.20	2.52	.60	.18	12:24 a. m. (18)	.04	.03	.01	12:45 a. m. (18)	21	.001		
18 to 30			.18					0					0		
Total			4.00					.04					.001		

¹ If different from the date in column 1, date is in parentheses after the time.

TABLE 42.—Summary of rainfall, run-off, and silt loss, watershed 131, 1939—Continued

Date	Rainfall						Run-off						Silt loss in run-off water	Remarks
	Time began	Duration	Total amount	Intensity		Time rise began ¹	Total amount	Maximum rate		Time of maximum rate ¹	Period of rise			
				Maximum for—	Average rate for duration of rainfall									
				5-minute period	30-minute period									
		Hr. min.	In.	In. per hr.	In. per hr.	In. per hr.		In.	Sec.-ft.	In. per hr.		Hr. min.	Tons per acre	
May:														
1 to 9			0.11					0					0	
9	4:15 a. m.	1 27	.47	1.56	0.54	0.32		0					0	
9 to 21			.06					0					0	
21	3:21 p. m.	1 8	.34	2.04	.60	.30		0					0	
21 to 31			.22					0					0	
Total			1.20					0					0	
June:														
1 to 8			.40					0					0	
8	6:06 a. m.	1 38	.34	1.68	.30	.21		0					0	
8 to 10			.18					0					0	
10	12:36 p. m.	31	.73	5.04	1.46	1.41	12:58 p. m.	0	0.01	0.006	1:05 p. m.	7	0	
10 to 13			.23					0					0	
13	7:33 a. m.	4 47	.88	.48	.32	.18		0					0	
13 to 18			0					0					0	
18	7:30 a. m.	5 15	1.47	1.00	.84	.28		0					0	
18			.38					0					0	
18	9:30 p. m.	2 28	.62	.60	.56	.25	1:01 a. m. (19)	.007	.01	.004	1:15 a. m. (19)	14	0	
19	2:35 a. m.	1 55	.33	.48	.30	.17	3:05 a. m.	.01	.01	.004	3:50 a. m.	45	0	
19 to 22			.18					0					0	
22	11:52 a. m.	51	.45	1.08	.44	.53		0					0	
22 to 29			0					0					0	
29	1:42 p. m.	36	.29	.96	.54	.48		0					0	
29 to 30			0					0					0	
Total			6.48					.02					0	
July:														
1 to 4			.03					0					0	
4	9:50 p. m.	1 30	.70	3.12	1.12	.47		0					0	
4 to 6			0					0					0	
6	4:16 a. m.	44	.60	2.28	.80	.82		0					0	
6 to 8			0					0					0	
8	5:05 a. m.	13	.66	4.92	1.32	3.05		0					0	
8	7:33 a. m.	42	1.11	2.88	1.98	1.58	7:38 a. m.	.01	.06	.02	8:17 a. m.	39	0	
8	12:24 p. m.	45	.80	3.24	.96	1.07	12:34 p. m.	.05	.23	.10	1:07 p. m.	33	.002	
8 to 18			.05					0					0	
18	2:55 a. m.	6 35	.65	.36	.16	.10		0					0	
18 to 20			0					0					0	
20	4:28 p. m.	39	.92	3.32	1.18	1.42		0					0	
20 to 26			0					0					0	
26	5:10 a. m.	30	.51	3.48	1.04	1.02		0					0	
26 to 29			.10					0					0	
29	5:00 a. m.	4 20	.44	.96	.38	.10		0					0	
29 to 31			.24					0					0	
Total			6.81					.06					.002	
August:														
1 to 7			.20					0					0	
7	3:10 p. m.	1 33	.46	1.80	.14	.30		0					0	
8 to 13			0					0					0	
13	1:10 p. m.	53	.36	1.08	.26	.41		0					0	
13 to 31			.35					0					0	
Total			1.37					0					0	
September:														
1 to 29			.48					0					0	
29	9:14 p. m.	10 51	.67	.72	.30	.06		0					0	
29 to 30			0					0					0	
Total			1.15					0					0	
October:														
1 to 10			0					0					0	
10	4:45 p. m.	2 0	.30	.48	.30	.15		0					0	
10 to 25			.02					0					0	
25	12:14 a. m.	5 11	.51	1.44	.12	.10		0					0	
25	12:30 p. m.	7 22	1.14	.72	.44	.15	12:30 p. m.	.001					0	
25	9:35 p. m.	50	.26	1.44	.20	.31		0					0	
26	8:30 a. m.	30	.73	4.68	1.46	1.46	8:31 a. m.	.02	.02	.01	8:37 a. m.	6	0	
26 to 27			.01					0					0	
27	4:03 a. m.	4 3	1.18	1.32	.88	.29	4:15 a. m.	.002	.01	.004	5:00 a. m.	45	0	
27 to 31			.23					0					0	
Total			4.38					.01					0	
November:														
1 to 20			.28					0					0	
20	7:00 p. m.	9 20	.32	.24	.10	.03		0					0	
22 to 30			0					0					0	
Total			.60					0					0	
December:														
1 to 2			.15					0					0	
2	9:40 a. m.	2 50	.36	.48	.32	.13		0					0	
2 to 13			.25					0					0	
13	1:50 p. m.	4 50	.33	.12	.13	.07		0					0	
13 to 31			.54					0					0	
Total			1.63					0					0	
Year			38.36					.21					.004	

¹ If different from date in column 1, date is in parentheses after the time.

TABLE 43.—Summary of rainfall, run-off, and silt loss, a watershed 134, 1939

LOCATION: Latitude 40°22'13'', longitude 81°48'29''.

PHYSICAL CHARACTERISTICS:

Size.—Length of principal drainage, 350 feet. Area 0.916 acre.

Shape factor.—0.33.

Slope.—11 percent of watershed with slope from 6 to 10 percent; 47 percent of watershed, 10 to 20 percent; 42 percent of watershed with slope exceeding 20 percent. Average slope, 23.2 percent.

Soil.—Predominating soil is Muskingum silt loam, an upland soil of residual origin derived from sandstone and shale. The surface soil is brown to yellowish brown, normally about 6 to 8 inches in depth. The subsoil is yellowish brown, is well drained, and contains occasional sandstone and shale fragments.

Erosion conditions.—Sheet erosion has removed 50 to 75 percent of the topsoil. There is no gully erosion.

LAND USE:

Plan.—Reforested, improved practices. Pine trees were planted in April 1939.

MEASUREMENTS:

Precipitation.—Precipitation is measured at recording rain gage 102. If this rain gage fails to operate, records are obtained from rain gage 145 or 146. Snowfall is measured in the rain gage supplemented by a snow board. Accumulated snow depth is observed regularly and core sampled when sufficiently deep.

Run-off.—Run-off is measured by Parshall measuring flume of 6-inch throat. The records of run-off are excellent.

Silt loss.—Silt loss is measured by silt box and Ramser automatic silt sampler placed below the measuring flume.

Date	Rainfall						Run-off					Silt loss in run-off water	Remarks	
	Time began	Duration	Total amount	Intensity		Average rate for duration of rainfall	Time rise began ¹	Total amount	Maximum rate		Time of maximum rate ¹			Period of rise
				5-minute period	30-minute period				Sec.-ft.	In. per hr.				
January		Hr. min.	In.	In. per hr.	In. per hr.	In. per hr.		In.	Sec.-ft.	In. per hr.		Hr. min.	Tons per acre	
1 to 12			0.07					0					0	Year 1938, land idle, weeds and briars.
13	12:01 a. m.	13 0	.64	0.24	0.14	0.05		0					0	Jan. 1-31, vegetation dormant, weeds 2 to 14 inches high; soil wet and soft to Jan. 13, wet and firm thereafter.
13 to 29			.46					0					0	
29	2:00 a. m.	10 35	.40	.12	.10	.04	10:30 a. m.	.01	0.01	0.01	12:10 p. m.	1 40	0	
29			.08					0					0	
29	11:30 p. m.	5 45	.88	.48	.36	.15	1:14 a. m. (30)	.11	.05	.05	2:35 a. m. (30)	1 21	.008	Jan. 13, 16, 18, 20, 23 and 26, snow.
30			.14	.36	.06	.05	4:20 p. m.	.004	.01	.01	5:00 p. m.	40	0	Jan. 13-28, snow on ground.
30 to 31			0										0	
Total			2.67					.12					.008	
February:			0					0					0	Feb. 1-28, vegetation dormant, weeds 2 to 14 inches high; soil wet and soft.
1 to 2			.38	.36	.14	.04	12:50 p. m.	.002	.002	.003	2:00 p. m.	1 10	.001	Feb. 3, 15, 21, and 23, snow.
2	2:30 a. m.	8 50	.27	.12	.08	.03		0					0	Feb. 3-5, 15-18, 21-25, snow on ground.
3	8:15 a. m.	8 30	.13					0					0	
3 to 9			.29	.36	.22	.10	10:30 p. m.	.004	.01	.01	10:39 p. m.	9	.007	
9	4:30 p. m.	3 0	.23	.24	.12	.04	11:21 a. m.	.01	.02	.02	11:45 a. m.	24	0	
10	3:00 a. m.	6 0	0					0					0	
10 to 14			1.36	.48	.38	.09	1:07 a. m. (15)	.19	.10	.11			.018	
14	8:30 p. m.	14 45	0					0					0	
15 to 19			.24	.72	.22	.14	5:07 a. m.	.03	.04	.04	5:54 a. m.	47	.016	
19	4:10 a. m.	1 40	.27	.72	.24	.10	12:51 a. m.	.04	.03	.03	1:55 a. m.	1 4	0	
20	12:10 a. m.	2 50	.37	.12	.10	.05		0					0	
21	10:20 a. m.	7 5	0					0					0	
21 to 26			.55	.24	.14	.05	9:00 a. m.	.29	.08	.09			.011	
26	1:00 a. m.	11 55	0					0					0	
26 to 28			.26	.36	.20	.10	3:44 a. m.	.05	.05	.05	4:10 a. m.	26		
28	2:40 a. m.	2 30												
Total			4.35					.62					.053	
March:			.25					0					0	Mar. 1-31, vegetation dormant, weeds 2 to 14 inches high; soil wet and soft.
1 to 11			.67	.48	.28	.07		0					0	
11	5:12 a. m.	9 50	.59	1.08	.40	.13	3:55 a. m.	.04	.02	.02	4:15 a. m.	20	.029	
12	3:37 a. m.	4 37	.71	.72	.52	.16	3:55 p. m.	.10	.05	.06	4:35 p. m.	40	0	
12	3:50 p. m.	4 23	.19					0					0	
12 to 27			.46	.24	.12	.04		0					0	
27	3:13 a. m.	10 33	.02					0					0	
28 to 29			.83	.48	.24	.06		0					0	
29	4:30 p. m.	13 29	0					0					0	
30 to 31								0					0	
Total			3.72					.14					.029	
April:			.02					0					0	Apr. 5, grass growing; soil fairly wet and soft.
1 to 5			.69	.24	.16	.07		0					0	Apr. 6, trees planted.
5	11:00 p. m.	10 32	.13					0					0	Apr. 9 and 11, same as Apr. 5, except soil wet.
6 to 9			.28	.24	.16	.08		0					0	
9	11:30 p. m.	3 30	0					0					0	
10			.32	.48	.18	.08		0					0	
11	12:01 a. m.	3 52	.05					0					0	
11 to 14			.30	.24	.14	.06		0					0	
14	6:00 p. m.	5 0	.36	.24	.22	.09		0					0	
15	2:40 p. m.	4 10	.35	.24	.10	.07		0					0	
16	11:36 a. m.	5 8	1.16	2.52	.64	.27	10:51 p. m.	.24	.18	.19			.035	Apr. 14-18, same as Apr. 5, except soil wet and firm.
17	10:50 p. m.	4 22	.25					0					0	
18 to 30														
Total			3.91					.24					.035	

¹ If different from date in column 1, date is in parentheses after the time.

TABLE 43.—Summary of rainfall, run-off, and silt loss, watershed 134, 1939—Continued

Date	Rainfall						Run-off						Silt loss in run-off water	Remarks
	Time began	Duration	Total amount	Intensity		Average rate for duration of rainfall	Time rise began	Total amount	Maximum rate		Time of maximum rate ¹	Period of rise		
				5-minute period	30-minute period				Sec.-ft.	In. per hr.				
		Hr. min.	In.	In. per hr.	In. per hr.	In. per hr.		In.	Sec.-ft.	In. per hr.		Hr. min.	Tons per acre	
May:			0.07											
1 to 8			.51	2.40	0.42	0.27		0					0	
8	9:00 p. m.	1 54	.05					0					0	May 8, briars leafing; grass and weeds 3 inches high; soil fairly wet and crusted.
9 to 21			.28	1.32	.48	.27	11:50 p. m.	0	.004	0.01	0.01	11:53 p. m.	3	0
21	11:48 p. m.	1 2	.21					0					0	Briers in leaf; grass and weeds 5 inches high; soil moist and hard.
22 to 31			.21					0					0	
Total			1.12					.004					0	
June:			.02					0					0	June 2-3, briars in leaf; grass and weeds 8 inches high; soil moist and hard.
1 to 2			.18	.60	.28	.68	8:05 a. m.	.002	.002	.002	8:15 a. m.	10	0	
2	8:00 a. m.	16	.20	.24	.12	.12	9:05 a. m.	.005	.002	.002	9:30 a. m.	25	0	
3	8:50 a. m.	1 40	0					0					0	Grass and weeds 6 to 16 inches high; soil moist and crusted.
3 to 8			.26	1.68	.30	.16	6:11 a. m.	.03	.01	.01	6:20 a. m.	9	0	
8	6:06 a. m.	1 38	.14	1.56	.28	.29	2:09 p. m.	.002	.008	.009	2:10 p. m.	1	.001	Grass and weeds 6 to 16 inches high; soil moist and soft.
8	2:07 p. m.	29	.15	.18	.10	.08	7:10 p. m.	.01	.003	.003	8:30 p. m.	1 20	.005	
9	6:52 p. m.	1 54	.64	4.08	1.28	1.28	12:55 p. m.	.03	.13	.14	1:12 p. m.	17	.009	
10	12:46 p. m.	30	.19	1.80	.38	.95	1:15 a. m.	.004	.008	.009	1:25 a. m.	10	0	Grass and weeds 6 to 16 inches high; soil fairly wet and soft.
11	1:12 a. m.	12	0					0					0	
12			.90	.60	.36	.20	10:45 a. m.	.06	.04	.04			0	Grass and weeds 6 to 16 inches high; soil moist and soft.
13	7:38 a. m.	4 32	.07					0					0	Do.
13 to 18			1.44	1.56	.92	.27	7:57 a. m.	.07	.06	.07	7:40 p. m.	1 0	.002	Same as June 13 except soil wet and soft.
18	7:30 a. m.	5 18	.33	.48	.32	.18	6:40 p. m.	.01	.01	.01	12:27 a. m. (19)	47	0	
18	4:40 p. m.	1 48	.82	.72	.44	.19	11:40 p. m.	.05	.07	.07			0	
18	9:30 p. m.	4 20											0	
19 to 22			.09					0					0	
22	11:48 a. m.	20	.16	.84	.30	.48	12:38 p. m.	.001	.06	.07	12:47 p. m.	9	0	Grass and weeds 12 to 24 inches high; soil fairly wet and soft.
22	3:16 p. m.	17	.19	1.08	.34	.67	3:20 p. m.	.002	.08	.09	3:32 p. m.	12	0	
22 to 29			0					0					0	
29	1:48 p. m.	24	.35	1.92	.34	.88	1:51 p. m.	.002	.08	.09	2:05 p. m.	14	0	Grass and weeds 12 to 24 inches high; soil moist and crusted.
29 to 30			0					0					0	
Total			6.13					.28					.017	
July:			.02					0					0	July 4, 6, and 8, grass and weeds 12 to 24 inches high. Soil moist and crusted.
1 to 4			.70	3.00	1.20	.48	9:51 p. m.	.01	.01	.01	9:58 p. m.	7	.001	
4	9:50 p. m.	1 27	0					0					0	
5			.27	2.04	.54	1.08	4:15 a. m.	.003	.01	.01	4:23 a. m.	8	0	Soil fairly wet and soft.
6	4:15 a. m.	15	.44	2.68	.84	1.26	6:50 a. m.	.01	.07	.07	7:02 a. m.	12	0	Do.
6	6:49 a. m.	21	0					0					0	
7			.62	3.84	1.24	2.48	5:08 a. m.	.03	.16	.17	5:19 a. m.	11	0	Soil moist and soft.
8	5:05 a. m.	15	1.13	3.48	1.66	1.70	7:35 a. m.	.38	1.34	1.45	7:59 a. m.	24	.033	Soil wet and soft.
8	7:33 a. m.	40	.85	3.00	.90	.58	12:29 p. m.	.30	.67	.72	12:57 p. m.	28	0	Do.
8 to 18			0					0					0	
18	2:56 a. m.	6 24	.65	.30	.24	.10		0					0	Grass and weeds 12 to 30 inches high; soil moist and loose.
19			0					0					0	
20	4:27 p. m.	41	.86	3.72	1.44	1.26	4:30 p. m.	.04	.22	.24	4:58 p. m.	28	.002	Grass and weeds 12 to 30 inches high; soil fairly wet and soft.
20 to 26			0					0					0	
26	5:10 a. m.	40	.63	3.96	1.24	.95	5:12 a. m.	.01	.04	.04	5:23 a. m.	11	0	Grass and weeds 12 to 30 inches high; soil fairly wet and crusted.
26 to 29			.05					0					0	
29	5:00 a. m.	4 20	.44	.96	.38	.10	7:05 a. m.	.003	.006	.006			0	
30	1:04 a. m.	46	.24	.84	.40	.31	1:18 a. m.	.003	.008	.009	1:35 a. m.	17	0	July 29 and 30, same as July 20 except on July 29 soil moist.
30 to 31			0					0					0	
Total			6.90					.79					.036	
August:			.03					0					0	
1 to 3			.13	.36	.22	.16	12:30 p. m.	.005	.004	.004	12:40 p. m.	10	0	Grass and weeds 12 to 30 inches high; soil fairly wet and soft.
3	12:20 p. m.	50	.17					0					0	
3 to 8			.31	1.74	.44	.64	6:22 a. m.	0					0	Weeds 20 to 50 inches high; soil fairly wet and soft.
8	6:15 a. m.	29	0					0					0	
8 to 13			.46	1.08	.30	.50	1:10 p. m.	0					0	Weeds 20 to 50 inches high; soil fairly wet and crusted.
13	1:10 p. m.	55	.23					0					0	
13 to 31			.23					0					0	
Total			1.33					.005					0	
September:			.17					0					0	
1 to 9			.22	1.20	.44	.88		0					0	Sept. 9, grass and weeds dying; briar leaves falling; soil dry and crusted.
9	6:37 p. m.	15	.12					0					0	
9 to 29			.67	.48	.24	.06		0					0	Briers dormant, dead weeds 6 to 24 inches high; soil dry and hard.
29	9:14 p. m.	10 51	0					0					0	
29 to 30			0					0					0	
Total			1.18					0					0	
October:			0					0					0	
1 to 10			.31	.48	.34	.12		0					0	Oct. 10, briars dormant, dead weeds 6 to 24 inches high; soil dry and crusted.
10	4:40 p. m.	2 30	.02					0					0	
10 to 25			.89	1.44	.46	.15		0					0	
25	12:17 a. m.	12 53	.75	4.32	1.46	.90	8:34 a. m.	.03	.20	.22	8:44 a. m.	10	.002	Oct. 25-27, dead weeds 4 to 14 inches high; soil dry and crusted, Oct. 25; fairly wet and soft, Oct. 26-27.
26	8:30 a. m.	50	.97	1.20	.88	.28	4:42 a. m.	.04	.08	.09	5:06 a. m.	24	0	
27	4:00 a. m.	3 30	0					0					0	
27 to 31			3.94					.07					.002	
Total			.64					0					0	
November:								0					0	
1 to 30								0					0	
December:								0					0	
1 to 2			.14					0					0	Dead weeds 4 to 14 inches high; soil fairly wet and soft.
2	9:40 a. m.	3 20	.39	.54	.34	.12		0					0	Do.
2 to 13			.23					0					0	
13	1:50 a. m.	3 50	.30	.12	.10	.08		0					0	
13 to 31			.50					0					0	
Total			1.56					0					0	
Year			37.45					2.27					.180	

¹ If different from date in column 1, date is in parentheses after the time.

TABLE 44.—Summary of rainfall, run-off, and silt loss, watershed 135, 1939

LOCATION: Latitude 40°22'23'', longitude 81°47'03''.

PHYSICAL CHARACTERISTICS:

Size.—Length of principal drainage, 525 feet. Area, 2.69 acres.

Shape factor.—0.43.

Slope.—10 percent of watershed with slope from 6 to 10 percent; 84 percent of watershed, from 10 to 20 percent; 6 percent of watershed with slope exceeding 20 percent. Average slope, 15.3 percent.

Soil.—Predominating soil is Muskingum silt loam, an upland soil of residual origin derived from sandstone and shale. The surface soil is brown to yellowish brown, normally about 6 to 8 inches in depth. The subsoil is yellowish brown, is well drained, and contains occasional sandstone and shale fragments.

Erosion conditions.—Sheet erosion has removed 25 to 50

percent of the topsoil from this watershed. There is no gully erosion.

LAND USE:

Plan.—Single permanent-grass cover, meadow, improved practices.

MEASUREMENTS:

Precipitation.—Precipitation is measured at recording rain gage 100. If this rain gage fails to operate, records are obtained from rain gage Y101 or Y102. Snowfall is measured in the rain gage supplemented by a snow board. Accumulated snow depth is observed regularly and core sampled when sufficiently deep.

Run-off.—Run-off is measured by Parshall measuring flume of 12-inch throat. The records of run-off are excellent.

Silt loss.—Silt loss is measured by silt box and Ramser automatic silt sampler placed below the measuring flume.

Date	Rainfall						Run-off					Silt loss in run-off water	Remarks	
	Time began	Duration	Total amount	Intensity			Time rise began	Total amount	Maximum rate		Time of maximum rate			Period of rise
				5-minute period	30-minute period	Average rate for duration of rainfall								
January:		Hr. min.	In.	In. per hr.	In. per hr.	In. per hr.		In.	Sec.-ft.	In. per hr.		Hr. min.	Tons per acre	
1 to 29			0.51					0					0	Jan. 1-31, pasture dormant, 2 inches high; soil wet and firm.
29	2:30 a.m.	13 0	.46	0.12	0.08	0.04		0					0	
29	11:30 p.m.	5 10	.78	.48	.32	.15	1:50 a.m.	.002	0.004	0.002	12:00 a.m.	10	0	Jan. 13, 16, 18, 20, 23, and 26, snow.
30 to 31			.12					0					0	Jan. 13-28, snow on ground.
Total			1.87					.002					0	
February:														
1 to 2			0					0					0	Feb. 1-28, dormant, 2 inches high; soil wet and firm.
2	2:00 a.m.	8 35	.37	.12	.08	.43		0					0	
2 to 14			.81					0					0	Feb. 3, 15, 21, and 23, snow.
14	8:30 p.m.	12 10	1.46	.60	.40	.12		0					0	Feb. 3-5, 16-18, 21-22, 25, snow on ground.
15 to 19			0					0					0	
19	3:55 a.m.	2 25	.26	.72	.20	.11		0					0	
20	12:04 a.m.	1 46	.33	.72	.20	.19		0					0	
21	10:00 a.m.	6 20	.38	.12	.08	.06		0					0	
21 to 25			0					0					0	
26	12:01 a.m.	6 30	.39	.24	.12	.06	7:45 a.m.	.005	.01	.005	8:20 a.m.	35	0	
26 to 28			.25					0					0	
Total			4.27					.005					0	
March:														
1 to 5			0					0					0	Dormant, 2 inches high; soil wet and firm.
5	12:50 a.m.	4 10	.25	.12	.08	.06		0					0	
5 to 12			.43					0					0	
12	1:40 a.m.	4 42	.74	1.20	.44	.16		0					0	Do.
12	3:48 p.m.	4 32	.77	.96	.54	.17		0					0	Do.
12 to 27			.19					0					0	Dormant, 2 inches high; soil fairly wet and firm.
27	4:52 a.m.	11 20	.42	.24	.10	.04		0					0	
27 to 30			.08					0					0	
30	3:40 a.m.	8 0	.68	.36	.22	.09		0					0	
31			0					0					0	
Total			3.56					0					0	
April:														
1 to 5			.06					0					0	Do.
5	11:00 p.m.	10 40	.72	.24	.20	.07		0					0	
6 to 9			.12					0					0	
9	11:40 p.m.	3 10	.28	.18	.16	.09		0					0	April 6-19, dormant, 2 inches high; soil wet and firm.
11	12:10 a.m.	3 4	.32	.60	.12	.10		0					0	
11 to 14			.05					0					0	
14	6:00 p.m.	5 21	.31	.24	.12	.06		0					0	
15	2:50 p.m.	4 30	.38	.24	.22	.08		0					0	
15 to 17			.34					0					0	
17	10:54 p.m.	1 13	.76	3.36	.64	.62	11:47 p.m.	.001	.004	.002	11:50 p.m.	3	0	
18	3:18 a.m.	3 16	.46	.36	.30	.14	4:05 a.m.	.008	.01	.005	6:35 a.m.	2 30	0	
18 to 30			.17					0					0	
Total			3.97					.009					0	

1 Jan. 30.

TABLE 44.—Summary of rainfall, run-off, and silt loss, watershed 135, 1939—Continued

Date	Rainfall						Run-off						Silt loss in run-off water	Remarks
	Time began	Duration	Total amount	Intensity			Time rise began	Total amount	Maximum rate		Time of maximum rate	Period of rise		
				Maximum for—		Average rate for duration of rainfall								
				5-minute period	30-minute period									
		Hr. min.	In.	In. per hr.	In. per hr.	In. per hr.		In.	Sec.-ft.	In. per hr.		Hr. min.	Tons per acre	
May:														
1 to 9			0.10					0					0	
9 to 21	4:14 a.m.	1 58	.51	2.04	0.46	0.26		0					0	Growing, 5 inches high; soil fairly wet and firm.
21 to 31	11:49 p.m.	51	.25	1.50	.48	.29		0					0	Growing, 5 inches high; soil moist and hard.
22 to 31			.20					0					0	
Total			1.17					0					0	
June:														
1 to 10			.95					0					0	May 26-June 10, heavily grazed.
10 to 13	12:37 p.m.	41	.72	4.92	1.40	1.05	1:07 p.m.	.001	0.05	0.02	1:09 p.m.	2	0	Flowering stage, 18 inches high; soil moist and firm.
13 to 18	7:40 a.m.	4 30	.93	.48	.36	.21		0					0	Do.
18 to 22	7:30 a.m.	5 30	1.28	.84	.70	.23	12:27 p.m.	.002	.01	.005	12:35 p.m.	8	0	Do.
22 to 29	2:30 p.m.	9 39	1.29	.36	.22	.13		0					0	Same as June 10 except soil wet and firm.
29 to 30	11:52 a.m.	1 13	.09	.41	.96	.34		0					0	Flowering stage, .23 inches high; soil fairly wet and firm.
30 to 31	1:38 p.m.	27	.06	.40	1.44	.80		0					0	Flowering stage, 24 inches high; soil moist and firm.
Total			6.32					.003					0	
July:														
1 to 4			0					0					0	July 1-31, heavily grazed.
4 to 6	9:56 a.m.	1 24	.75	3.96	1.26	.54		0					0	July 1-8, seed stage, 18 inches high; soil moist and firm on July 4, fairly wet and firm on July 6, moist and firm before first storm on July 8, wet and firm during second and third storms of July 8.
6 to 8	4:24 a.m.	28	.49	1.92	.98	1.05		0					0	Seed stage, 16 inches high; soil moist and firm.
8 to 18	5:05 a.m.	15	.56	3.36	1.12	2.24	5:14 a.m.	.001	.02	.009	5:20 a.m.	6	0	Seed stage, 16 inches high; soil fairly wet and firm.
18 to 20	7:34 a.m.	58	1.01	2.64	1.44	1.05	7:38 a.m.	.03	.21	.08	8:04 a.m.	26	0	Do.
20 to 26	12:26 p.m.	2 24	.95	1.80	.94	.40	12:32 p.m.	.11	.90	.33			.001	Do.
26 to 29	2:50 a.m.	5 48	.60	.36	.18	.10		0					0	Do.
29 to 30	4:24 p.m.	40	.40	2.16	.74	.60		0					0	Do.
30 to 31	5:01 a.m.	36	.57	3.72	1.14	.95		0					0	Do.
Total	9:50 p.m.	10	.32	3.24	.64	1.92		0					0	Do.
August:														
1 to 8	5:00 a.m.	3 40	.37	.60	.28	.10		0					0	July 29-30, seeds shattering; soil moist and firm July 29, fairly wet and firm July 30.
8 to 13	1:00 a.m.	50	.25	.84	.46	.30		0					0	
13 to 31			0					0					0	
Total			6.27					.14					.001	
September:														
1 to 29			.37					0					0	
29 to 30	9:10 p.m.	8 40	.67	.60	.28	.08		0					0	Semidormant, 3 inches high; soil dry and loose.
Total			1.04					0					0	
October:														
1 to 10			0					0					0	Oct. 1-20, heavily grazed.
10 to 25	4:45 p.m.	1 35	.33	.48	.32	.21		0					0	Semidormant, 4 inches high; soil dry and hard.
25 to 27	12:21 a.m.	16 14	1.84	1.68	.42	.11		0					0	Oct. 25-27, dormant, 2 inches high; soil dry and hard on Oct. 25, fairly wet and soft on Oct. 26, and soft and wet on Oct. 27.
27 to 31	8:35 a.m.	3 35	.71	.84	.44	.20	8:40 a.m.	.03	.48	.17	8:46 a.m.	6	.001	
Total	4:00 a.m.	9 51	1.30	1.32	.84	.13	4:54 a.m.	.004	.04	.01	5:05 a.m.	11	0	
November:														
1 to 30			.52					0					0	
December:														
1 to 2			.16					0					0	
2 to 13	9:50 a.m.	3 21	.38	.60	.34	.11		0					0	Dormant, 2 inches high; soil fairly wet and soft.
13 to 31	2:00 a.m.	4 0	.31	.24	.14	.08		0					0	Dormant, 2 inches high; soil wet and soft.
Total			1.35					0					0	
Year			35.88					.19					.002	

TABLE 45.—Summary of rainfall, run-off, and silt loss, watershed 188, 1939

LOCATION: Latitude 40°21'27'', longitude 81°47'41''.

PHYSICAL CHARACTERISTICS:

Size.—Length of principal drainage, 425 feet. Area, 2.06 acres.

Shape factor.—0.50.

Slope.—60 percent of watershed with slope from 6 to 10 percent; 40 percent of watershed with slope ranging from 10 to 20 percent. Average slope, 9.2 percent.

Soil.—Predominating soil is Muskingum silt loam, an upland soil of residual origin derived from sandstone and shale. The surface soil is brown to yellowish brown, normally about 6 to 8 inches in depth. The subsoil is yellowish brown, is well drained, and contains occasional sandstone and shale fragments usually increasing with depth.

Erosion conditions.—Sheet erosion has removed 50 to 75 percent of the topsoil. There is considerable rill formation

during storms. Erosional deposits near lower end of watershed cover 80 square feet.

LAND USE:

Plan.—Rotated crops, prevailing practices; similar to adjacent watershed 191.

MEASUREMENTS:

Precipitation.—Precipitation is measured at recording rain gage 115. If this rain gage fails to operate, records are obtained from rain gage 113 or 116. Snowfall is measured in the rain gage supplemented by a snow board. Accumulated snow depth is observed regularly and core sampled when sufficiently deep.

Run-off.—Run-off is measured by type H measuring flume of 3-foot depth. The records of run-off are excellent.

Silt loss.—Silt loss is measured by silt box and Ramser automatic silt sampler placed below the measuring flume.

Date	Rainfall						Run-off					Silt loss in run-off water ¹	Remarks		
	Time began	Duration	Total amount	Intensity			Time rise began	Total amount	Maximum rate		Time of maximum rate			Period of rise	
				Maximum for—		Average rate for duration of rain-fall									
				5-minute period	30-minute period										
		Hr. min.	In. 0.04	In. per hr.	In. per hr.	In. per hr.		In. 0	Sec.-ft.	In. per hr.		Min.	Tons per acre		
July:															
20 to 26															July 1-20, rainfall 4.56 inches.
26	5:13 a. m.	37	.60	3.84	1.18	0.97	5:20 a.m.	.29	² 1.78	0.856	5:28 a. m.	8			July 23-27, oats cut.
26 to 29			.04					0							Oats partly cut; soil fairly wet and firm.
29	5:15 a. m.	2 29	.70	1.44	.82	.28	7:16 a. m.	.29	1.12	.539	7:28 a. m.	12			Oat stubble 6 inches high;
30	1:13 a. m.	33	.40	1.68	.76	.72	1:20 a. m.	.17	.83	.401	1:43 a. m.	23			soil fairly wet and firm.
30 to 31			0					0							
Total			1.78					.75							
August:								0							
1 to 13			.53												
13	1:10 p. m.	31	.42	2.64	.64	.84		0							Do.
13 to 31			.21					0							
Total			1.16					0							
September:															
1 to 29			.48					0					0		Aug. 24-Sept. 21, plowed.
29	9:20 p. m.	4 2	.64	.60	.48	.16		0					0		Soil bare, dry and loose.
29								0					0		
29 to 30			0					0					0		
Total			1.12					0					0		
October:															
1 to 10			0					0					0		Soil bare, dry and loose.
10	4:45 p. m.	2 5	.34	.36	.28	.17		0					0		Oct. 11-12, wheat drilled.
10 to 25			0					0					0		Oct. 25-27, wheat 1 inch
25	12:27 a. m.	6 43	.43	1.32	.24	.06	6:10 p. m.	.01	.18	.087	6:40 p. m.	30			high, soil loose; soil dry at
25	1:10 p. m.	5 25	1.13	.60	.46	.21	10:43 p. m.	.01	.09	.045	10:50 p. m.	7			12:27 a. m. Oct. 25; fairly
25	9:40 p. m.	55	.23	1.08	.22	.25	8:40 a. m.	.39	3.48	1.674	8:48 a. m.	8			wet Oct. 25-26; wet Oct. 27.
26	8:34 a. m.	2 23	.53	2.40	1.00	.22	4:03 a. m.	.75	2.11	1.015					
27	3:52 a. m.	3 29	1.07	1.44	.80	.31	1:38 p. m.	.07	.92	.444	1:44 p. m.	6			
27	12:30 p. m.	1 12	.24	1.20	.26	.20		0					0		
27 to 31			0					0					0		
Total			3.97					1.23					5.809		
November:															
1 to 30			.49					0					0		
December:															
1 to 2			.14					0					0		Wheat 4 inches high; soil wet
2	9:50 a. m.	2 40	.40	1.08	.44	.15	10:43 a. m.	.02	.13	.064	10:48 a. m.	5	0		and soft.
2 to 13			.18					0					0		Wheat 5 inches high; soil wet
13	1:30 a. m.	4 20	.34	.36	.14	.08		0					0		and soft.
13 to 31			.13					0					0		
Total			1.19					.02					0		

¹ Record began Sept. 1.² Peak estimated.

TABLE 46.—Summary of rainfall and run-off, watershed 191, 1939

LOCATION: Latitude 40°21'29", longitude 81°47'45".

PHYSICAL CHARACTERISTICS:

Size.—Length of principal drainage, 375 feet. Area, 1.08 acres.

Shape factor.—0.33.

Slope.—55 percent of watershed with slope from 6 to 10 percent; 45 percent of watershed with slope from 10 to 20 percent. Average slope, 9.4 percent.

Soil.—Predominating soil is Muskingum silt loam, an upland soil of residual origin derived from sandstone and shale. The surface soil is brown to yellowish brown, normally about 6 to 8 inches in depth. The subsoil is yellowish brown, well drained, and contains occasional sandstone and shale fragments.

Erosion conditions.—Sheet erosion has removed 50 to 75 percent of the topsoil. Two gullies 12 to 16 inches deep, with potholes, start near the lower end of the watershed. Ero-

sional deposits near the lower part of the watershed cover 10 square feet.

LAND USE:

Plan.—Rotated crops; similar to adjacent watershed 188. Improved practices will begin in 1941.

MEASUREMENTS:

Precipitation.—Precipitation is measured at recording rain gage 115. If this rain gage fails to operate, records are obtained from rain gages 113 to 116. Snowfall is measured in the rain gage supplemented by a snow board. Accumulated snow depth is observed regularly and core sampled when sufficiently deep.

Run-off.—Run-off is measured by type H measuring flume of 1.5-foot depth. The records of run-off are only fair. Silt deposits cause inaccuracy of recession curves during most storms.

Date	Rainfall						Run-off					Remarks	
	Time began	Duration	Total amount	Intensity		Average rate for duration of rainfall	Time rise began	Total amount	Maximum rate		Time of maximum rate		Period of rise
				Maximum for—									
				5-minute period	30-minute period								
August:		<i>Hr. min.</i>	<i>In.</i>	<i>In. per hr.</i>	<i>In. per hr.</i>	<i>In. per hr.</i>		<i>Inches</i>	<i>Sec.-ft.</i>	<i>In. per hr.</i>		<i>Min.</i>	
1 to 13			0.53					0					Oat stubble 6 inches high; soil fairly wet and firm.
13	1:10 p. m.	17	.36	2.64	0.66	1.27		0					
13 to 31			.27					0					
Total			1.16										
September:													Sept. 1-21, plowed. Soil bare, dry and loose.
1 to 29			.48					0					
29	9:20 p. m.	4 2	.64	.60	.48	.16		0					
29 to 30			0					0					
Total			1.12					0					
October:													Soil bare, dry and loose. Oct. 11, wheat drilled. Oct. 25-27, soil bare and loose; soil dry 12:27 a. m., Oct. 25; fairly wet at 1:10 p. m. and 9:40 p. m., Oct. 25 and 8:34 a. m., Oct. 26; wet on Oct. 27.
1 to 10			0					0					
10	4:45 p. m.	2 5	.34	.36	.28	.17		0					
10 to 25			0					0					
25	12:27 a. m.	6 43	.43	1.32	.24	.06		0					
25	1:10 p. m.	5 25	1.13	.60	.46	.21	6:34 p. m.	.01	0.11	0.100	6:39 p. m.	5	
25	9:40 p. m.	55	.23	1.08	.22	.25	10:35 p. m.	.007	.04	.038			
26	8:34 a. m.	2 23	.53	2.40	1.00	.22	8:42 a. m.	.32	3.55	3.25	8:48 a. m.	6	
27	3:52 a. m.	3 29	1.07	1.44	.80	.31	4:03 a. m.	.56	1.20	1.10			
27	12:30 p. m.	1 12	.24	1.20	.26	.20	1:39 p. m.	.06	.68	.618	1:43 p. m.	4	
27 to 31			0										
Total			3.97					.96					
November:													Wheat 5 inches high; soil fairly wet and soft. Do.
1 to 30			.49					0					
December:													
1 to 2			.14					0					Wheat 5 inches high; soil fairly wet and soft. Do.
2	9:50 a. m.	40	.40	1.08	.44	.15	10:45 a. m.	.02	.08	.072	10:52 a. m.	7	
2 to 13			.18					0					
13	1:30 a. m.	4 20	.34	.36	.14	.08		0					
13 to 31			.13					0					
Total			1.19					.02					

TABLE 47.—Daily run-off from watershed 91, Oct. 1, 1938, to Dec. 31, 1939

Day	1938			1939											
	October	November	December	January	February	March	April	May	June	July	August	September	October	November	December
	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>
1.....	0.0019	0.0020	0.0045	0.0056	0.111	0.131	0.0904	0.0351	0.0107	0.0154	0.0040	0.0008	0.0005	0.0021	0.0021
2.....	.0017	.0017	.0046	.0073	.169	.103	.0742	.0316	.0114	.0136	.0031	.0004	.0002	.0018	.0065
3.....	.0016	.0013	.0072	.0079	.135	.0881	.0566	.0291	.0114	.0131	.0032	.0003	.0002	.0016	.0044
4.....	.0016	.0016	.0079	.0082	.0966	.0748	.0467	.0262	.0097	.0216	.0031	.0006	.0002	.0016	.0037
5.....	.0025	.0067	.0080	.0103	.0791	.0946	.0430	.0242	.0088	.0197	.0023	.0011	.0002	.0016	.0031
6.....	.0021	.0023	.0076	.0077	.0859	.0707	.104	.0222	.0085	.0147	.0021	.0007	.0002	.0015	.0028
7.....	.0017	.0019	.0066	.0068	.104	.0554	.0713	.0212	.0082	.0126	.0034	.0003	.0002	.0018	.0025
8.....	.0017	.0034	.0064	.0066	.0794	.0484	.0673	.0215	.0081	.0374	.0042	.0003	.0001	.0019	.0023
9.....	.0016	.0026	.0063	.0066	.0768	.0474	.0620	.0268	.0087	.0197	.0020	.0001	.0001	.0015	.0023
10.....	.0015	.0021	.0058	.0074	.178	.0407	.0999	.0216	.0096	.0185	.0014	.0002	.0007	.0017	.0024
11.....	.0014	.0020	.0056	.0062	.115	.0553	.142	.0190	.0108	.0157	.0013	.0002	.0007	.0021	.0021
12.....	.0014	.0018	.0050	.0058	.0878	.436	.102	.0178	.0078	.0147	.0012	.0001	.0006	.0016	.0019
13.....	.0018	.0024	.0043	.0057	.0750	.207	.0851	.0178	.0211	.0140	.0196	.0001	.0005	.0015	.0047
14.....	.0017	.0022	.0040	.0065	.0681	.142	.0790	.0178	.0100	.0130	.0038	.0002	.0004	.0016	.0032
15.....	.0015	.0019	.0034	.0058	.316	.117	.115	.0175	.0084	.0116	.0025	.0002	.0005	.0015	.0028
16.....	.0013	.0018	.0039	.0060	.130	.0933	.153	.0172	.0077	.0115	.0022	0	.0002	.0015	.0027
17.....	.0013	.0024	.0035	.0055	.110	.0765	.157	.0162	.0075	.0114	.0018	.0002	.0005	.0017	.0026
18.....	.0014	.0209	.0027	.0054	.122	.0609	.582	.0151	.0635	.0076	.0018	.0001	.0007	.0019	.0026
19.....	.0020	.0232	.0026	.0056	.233	.0534	.234	.0144	.166	.0130	.0018	.0001	.0010	.0021	.0028
20.....	.0028	.0069	.0029	.0052	.232	.0492	.148	.0144	.0383	.0118	.0017	.0002	.0010	.0018	.0029
21.....	.0022	.0052	.0034	.0068	.136	.0415	.122	.0153	.0232	.0117	.0012	.0001	.0007	.0026	.0026
22.....	.0018	.0048	.0026	.0216	.110	.0383	.103	.0156	.0372	.0104	.0009	.0001	.0009	.0030	.0023
23.....	.0016	.0044	.0035	.0120	.0909	.0334	.0856	.0131	.0396	.0100	.0009	.0002	.0009	.0025	.0023
24.....	.0021	.0043	.0037	.0121	.0730	.0320	.0744	.0122	.0241	.0096	.0007	.0002	.0014	.0023	.0017
25.....	.0015	.0039	.0034	.0102	.0689	.0314	.0673	.0114	.0195	.0087	.0008	.0002	.0195	.0020	.0022
26.....	.0016	.0039	.0073	.0087	.136	.0279	.0613	.0115	.0169	.0229	.0006	.0004	.0252	.0017	.0025
27.....	.0016	.0035	.0191	.0087	.137	.0428	.0530	.0111	.0157	.0149	.0006	.0001	.0505	.0014	.0020
28.....	.0020	.0031	.0035	.0082	.249	.0361	.0464	.0143	.0146	.0103	.0006	0	.0067	.0013	.0023
29.....	.0020	.0036	.0049	.0214	-----	.0320	.0404	.0112	.0363	.0133	.0006	0	.0034	.0010	.0021
30.....	.0020	.0042	.0058	.461	-----	.156	.0390	.0102	.0193	.0124	.0006	.0015	.0027	.0013	.0020
31.....	.0020	-----	.0054	.182	-----	.110	-----	.0099	-----	.0102	.0007	-----	.0024	-----	.0018
Total.....	.0549	.132	.165	.885	3.61	2.63	3.20	.562	.683	.455	.0747	.0090	.123	.0535	.0842
Total, 1939.....	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	12.37

TABLE 48.—Daily run-off from watershed 92, Oct. 1, 1938, to Dec. 31, 1939

Day	1938			1939											
	October	November	December	January	February	March	April	May	June	July	August	September	October	November	December
	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>
1.....	0.0012	0.0010	0.0041	0.0046	0.0885	0.123	0.0728	0.0280	0.0035	0.0088	0.0021	0	0	0.0018	0.0017
2.....	.0012	.0010	.0045	.0071	.173	.0859	.0593	.0240	.0051	.0064	.0014	0	0	.0013	.0076
3.....	.0010	.0010	.0081	.0091	.107	.0745	.0483	.0212	.0055	.0051	.0019	0	0	.0012	.0050
4.....	.0009	.0010	.0107	.0101	.0768	.0654	.0415	.0194	.0035	.0116	.0018	0	0	.0011	.0036
5.....	.0014	.0071	.0096	.0149	.0639	.0851	.0266	.0170	.0022	.0196	.0012	.0004	0	.0011	.0030
6.....	.0013	.0022	.0093	.0101	.0684	.0619	.107	.0163	.0020	.0108	.0010	0	0	.0011	.0026
7.....	.0014	.0017	.0071	.0077	.0856	.0480	.0683	.0152	.0021	.0063	.0013	0	0	.0012	.0023
8.....	.0016	.0024	.0060	.0067	.0670	.0419	.0583	.0146	.0021	.0549	.0037	0	0	.0014	.0018
9.....	.0011	.0025	.0067	.0066	.0636	.0388	.0550	.0208	.0021	.0204	.0014	0	0	.0011	.0017
10.....	.0009	.0017	.0050	.0081	.188	.0348	.0763	.0196	.0045	.0158	.0007	0	0	.0012	.0021
11.....	.0008	.0016	.0046	.0063	.0944	.0479	.123	.0152	.0046	.0105	.0006	0	.0001	.0017	.0018
12.....	.0009	.0015	.0042	.0056	.0706	.519	.0883	.0120	.0021	.0084	.0005	0	.0001	.0015	.0014
13.....	.0010	.0021	.0033	.0052	.0600	.221	.0732	.0104	.0167	.0070	.0178	0	0	.0012	.0056
14.....	.0011	.0016	.0030	.0063	.0551	.118	.0670	.0099	.0048	.0054	.0037	0	0	.0011	.0033
15.....	.0010	.0014	.0019	.0052	.376	.100	.0967	.0095	.0026	.0040	.0015	0	0	.0010	.0023
16.....	.0011	.0013	.0017	.0059	.121	.0778	.150	.0097	.0019	.0037	.0010	0	0	.0011	.0025
17.....	.0009	.0016	.0030	.0055	.0946	.0625	.145	.0080	.0016	.0037	.0010	0	0	.0011	.0024
18.....	.0010	.0227	.0030	.0054	.112	.0504	.559	.0069	.0601	.0124	.0008	0	0	.0009	.0021
19.....	.0010	.0320	.0018	.0055	.243	.0428	.222	.0060	.190	.0056	.0008	0	0	.0013	.0022
20.....	.0018	.0098	.0019	.0051	.240	.0414	.161	.0067	.0302	.0046	.0010	0	.0001	.0012	.0028
21.....	.0019	.0058	.0027	.0064	.130	.0354	.125	.0160	.0176	.0038	.0006	0	.0002	.0016	.0024
22.....	.0013	.0046	.0020	.0225	.0927	.0314	.0957	.0098	.0520	.0033	.0004	0	.0001	.0021	.0018
23.....	.0012	.0040	.0025	.0127	.0774	.0272	.0778	.0061	.0310	.0028	.0004	0	.0001	.0017	.0017
24.....	.0014	.0037	.0031	.0129	.0666	.0262	.0679	.0047	.0178	.0025	.0003	0	0	.0014	.0015
25.....	.0011	.0035	.0029	.0095	.0548	.0269	.0570	.0043	.0127	.0020	.0002	0	.0104	.0012	.0015
26.....	.0013	.0033	.0071	.0079	.129	.0238	.0517	.0038	.0115	.0200	0	0	.3000	.0009	.0019
27.....	.0012	.0030	.0275	.0083	.124	.0370	.0457	.0035	.0082	.0097	0	0	.0452	.0011	.0017
28.....	.0011	.0026	.0061	.0070	.269	.0349	.0396	.0086	.0073	.0029	0	0	.0085	.0007	.0022
29.....	.0011	.0030	.0054	.0199	-----	.0285	.0342	.0039	.0459	.0076	0	0	.0030	.0008	.0022
30.....	.0011	.0046	.0052	.594	-----	.158	.0298	.0031	.0147	.0092	0	0	.0023	.0009	.0020
31.....	.0012	-----	.0046	.176	-----	.0921	-----	.0025	-----	.0034	0	-----	.0018	-----	.0018
Total.....	.0365	.135	.168	1.02	3.39	2.46	2.92	.357	.566	.292	.0471	.0004	.102	.0370	.0785
Total, 1939.....	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	11.27

TABLE 49.—Daily run-off from watershed 93, Oct. 1, 1938, to Dec. 31, 1939

Day	1938			1939											
	October	November	December	January	February	March	April	May	June	July	August	September	October	November	December
	Inches	Inches	Inches	Inches	Inches	Inches	Inches	Inches	Inches	Inches	Inches	Inches	Inches	Inches	Inches
1	0.0010	0.0007	0.0046	0.0052	0.0862	0.125	0.0761	0.0263	0.0042	0.0072	0.0025	0	0	0.0020	0.0018
2	.0007	.0006	.0052	.0075	.176	.0898	.0522	.0226	.0056	.0072	.0022	0	0	.0015	.0087
3	.0006	.0005	.0088	.0092	.115	.0733	.0439	.0208	.0063	.0048	.0025	0	0	.0013	.0067
4	.0007	.0005	.0114	.0106	.0732	.0643	.0377	.0190	.0038	.0114	.0023	.0001	0	.0012	.0048
5	.0012	.0071	.0104	.0147	.0610	.0871	.0337	.0178	.0027	.0187	.0014	0	0	.0012	.0038
6	.0012	.0021	.0098	.0106	.0654	.0621	.0901	.0161	.0024	.0134	.0012	0	0	.0011	.0034
7	.0009	.0015	.0077	.0081	.0844	.0472	.0593	.0150	.0022	.0074	.0017	0	0	.0013	.0027
8	.0008	.0028	.0068	.0073	.0620	.0406	.0532	.0156	.0026	.0778	.0057	0	0	.0017	.0023
9	.0008	.0029	.0065	.0071	.0584	.0377	.0494	.0226	.0028	.0232	.0020	0	0	.0011	.0020
10	.0006	.0017	.0057	.0089	.186	.0318	.0785	.0166	.0049	.0190	.0010	0	0	.0009	.0025
11	.0005	.0015	.0051	.0069	.0926	.0431	.114	.0146	.0064	.0134	.0007	0	0	.0017	.0024
12	.0006	.0014	.0047	.0060	.0660	.541	.0830	.0121	.0029	.0107	.0007	0	.0001	.0013	.0017
13	.0010	.0021	.0038	.0056	.0556	.209	.0659	.0110	.0175	.0085	.0241	0	.0001	.0011	.0068
14	.0013	.0017	.0035	.0072	.0514	.126	.0625	.0105	.0058	.0067	.0055	0	.0001	.0010	.0045
15	.0012	.0012	.0024	.0055	.399	.0993	.101	.0099	.0035	.0052	.0022	0	.0001	.0009	.0036
16	.0010	.0013	.0019	.0064	.125	.0742	.140	.0101	.0025	.0045	.0011	0	.0001	.0009	.0032
17	.0005	.0015	.0033	.0069	.0996	.0589	.137	.0090	.0020	.0046	.0011	0	.0001	.0010	.0033
18	.0004	.0219	.0033	.0064	.112	.0464	.591	.0078	.0624	.0131	.0011	0	.0001	.0011	.0028
19	.0009	.0294	.0020	.0055	.247	.0400	.188	.0071	.180	.0063	.0010	0	.0001	.0013	.0031
20	.0016	.0099	.0021	.0060	.243	.0389	.127	.0076	.0284	.0051	.0013	0	.0001	.0011	.0037
21	.0017	.0060	.0030	.0070	.128	.0335	.103	.0097	.0178	.0045	.0008	0	.0001	.0017	.0030
22	.0011	.0052	.0022	.0221	.0957	.0307	.0800	.0115	.0505	.0041	.0006	0	.0001	.0024	.0024
23	.0009	.0047	.0029	.0131	.0955	.0271	.0634	.0072	.0279	.0034	.0005	0	.0001	.0019	.0018
24	.0011	.0043	.0038	.0132	.0681	.0255	.0524	.0058	.0163	.0032	.0002	0	.0001	.0015	.0017
25	.0009	.0041	.0032	.0101	.0531	.0264	.0462	.0049	.0122	.0028	.0003	0	.0016	.0012	.0011
26	.0007	.0037	.0068	.0086	.131	.0236	.0438	.0045	.0094	.0197	.0001	0	.0441	.0010	.0019
27	.0007	.0036	.0258	.0090	.126	.0382	.0383	.0043	.0084	.0110	0	0	.0542	.0008	.0021
28	.0007	.0029	.0062	.0078	.275	.0331	.0342	.0092	.0075	.0038	0	0	.0110	.0006	.0020
29	.0007	.0034	.0057	.0193	-----	.0277	.0287	.0047	.0425	.0080	.0001	0	.0045	.0007	.0019
30	.0007	.0048	.0062	.594	-----	.159	.0281	.0041	.0143	.0086	.0001	0	.0032	.0010	.0018
31	.0006	-----	.0049	.175	-----	.0829	-----	.0034	-----	.0036	.0002	-----	.0025	-----	.0015
Total	.0273	.135	.180	1.03	3.43	2.44	2.70	.361	.556	.341	.0642	.0001	.122	.375	.0950
Total, 1939															11.18

TABLE 50.—Daily run-off from watershed 94, Oct. 1, 1938, to Dec. 31, 1939

Day	1938			1939											
	October	November	December	January	February	March	April	May	June	July	August	September	October	November	December
	Inches	Inches	Inches	Inches	Inches	Inches	Inches	Inches	Inches	Inches	Inches	Inches	Inches	Inches	Inches
1	0.0011	0.0010	0.0047	0.0048	0.0718	0.106	0.0588	0.0182	0.0024	0.0064	0.0015	0	0	0.0014	0.0011
2	.0010	.0009	.0051	.0070	.162	.0718	.0418	.0165	.0039	.0048	.0013	.0001	0	.0011	.0060
3	.0010	.0009	.0083	.0091	.122	.0588	.0350	.0143	.0041	.0037	.0014	0	0	.0011	.0049
4	.0010	.0009	.0107	.0099	.0742	.0534	.0293	.0129	.0036	.0088	.0014	0	0	.0010	.0035
5	.0014	.0071	.0096	.0136	.0665	.0706	.0272	.0117	.0024	.0163	.0010	.0003	0	.0010	.0026
6	.0014	.0023	.0090	.0095	.0531	.0483	.0807	.0111	.0016	.0138	.0008	.0002	0	.0009	.0023
7	.0011	.0018	.0072	.0075	.0360	.0367	.0501	.0100	.0025	.0061	.0008	.0002	0	.0009	.0019
8	.0011	.0031	.0064	.0071	.0480	.0307	.0458	.0100	.0012	.0900	.0038	0	0	.0011	.0016
9	.0012	.0034	.0059	.0068	.0472	.0278	.0371	.0172	.0024	.0219	.0014	0	0	.0009	.0013
10	.0009	.0020	.0055	.0096	.155	.0242	.0669	.0117	.0030	.0150	.0007	.0001	0	.0009	.0017
11	.0009	.0018	.0051	.0064	.0769	.0352	.0996	.0100	.0043	.0098	.0006	.0001	0	.0011	.0016
12	.0009	.0016	.0046	.0057	.0542	.470	.0691	.0087	.0024	.0076	.0005	0	0	.0009	.0012
13	.0010	.0025	.0038	.0052	.0439	.196	.0528	.0079	.0139	.0064	.0244	0	0	.0008	.0041
14	.0011	.0020	.0028	.0068	.0211	.111	.0265	.0071	.0040	.0049	.0048	0	0	.0007	.0033
15	.0010	.0014	.0026	.0062	.348	.0859	.0881	.0071	.0023	.0037	.0019	0	0	.0006	.0021
16	.0009	.0014	.0032	.0064	.0981	.0612	.127	.0071	.0022	.0032	.0011	0	0	.0006	.0012
17	.0008	.0016	.0033	.0061	.0770	.0480	.124	.0064	.0014	.0030	.0010	0	0	.0007	.0020
18	.0008	.0226	.0021	.0089	.0878	.0375	.534	.0054	.0557	.0081	.0008	0	0	.0008	.0018
19	.0010	.0296	.0024	.0030	.206	.0310	.175	.0051	.163	.0049	.0007	0	0	.0007	.0020
20	.0017	.0096	.0024	.0057	.211	.0307	.114	.0051	.0208	.0034	.0010	0	0	.0006	.0025
21	.0018	.0061	.0028	.0065	.110	.0254	.0924	.0063	.0122	.0031	.0006	0	0	.0012	.0020
22	.0013	.0050	.0024	.0220	.0888	.0232	.0691	.0081	.0323	.0027	.0005	0	0	.0015	.0015
23	.0011	.0043	.0031	.0129	.0718	.0200	.0542	.0051	.0193	.0023	.0004	0	0	.0012	.0012
24	.0013	.0046	.0037	.0122	.0550	.0195	.0439	.0040	.0111	.0020	.0004	0	0	.0010	.0012
25	.0013	.0041	.0035	.0100	.0382	.0211	.0382	.0039	.0083	.0015	.0003	0	.0071	.0009	.0009
26	.0010	.0038	.0079	.0083	.108	.0182	.0350	.0030	.0064	.0151	.0002	0	.0353	.0008	.0013
27	.0010	.0036	.0258	.0091	.106	.0312	.0293	.0028	.0054	.0130	.0001	0	.0478	.0005	.0014
28	.0010	.0030	.0117	.0068	.242	.0263	.0266	.0093	.0048	.0028	0	0	.0079	.0007	.0013
29	.0010	.0035	.0090	.0213	-----	.0110	.0222	.0035	.0315	.0052	.0001	0	.0034	.0005	.0013
30	.0010	.0049	.0061	.517	-----	.144	.0222	.0026	.0105	.0060	.0002	0	.0023	.0008	.0012
31	.0010	-----	.0045	.157	-----	.0744	-----	.0024	-----	.0025	.0002	-----	.0018	-----	.0011
Total	.0341	.140	.185	.928	2.88	2.05	2.32	.254	.439	.298	.0539	.0010	.106	.0269	.0631
Total, 1939															9.42

TABLE 51.—Daily run-off from watershed 95, Oct. 1, 1938, to Dec. 31, 1939

Day	1938			1939											
	October	November	December	January	February	March	April	May	June	July	August	September	October	November	December
	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>
1	0.0008	0.0006	0.0041	0.0047	0.0838	0.126	0.0729	0.0239	0.0030	0.0120	0.0024	0.0001	0	0.0029	0.0015
2	.0007	.0008	.0043	.0067	.159	.0866	.0566	.0204	.0043	.0084	.0020	.0001	0	.0024	.0077
3	.0006	.0008	.0073	.0078	.118	.0678	.0455	.0184	.0055	.0071	.0022	.0001	0	.0019	.0081
4	.0006	.0008	.0097	.0084	.0754	.0575	.0373	.0170	.0044	.0072	.0024	.0001	0	.0018	.0059
5	.0011	.0062	.0086	.0118	.0628	.0779	.0333	.0154	.0023	.0209	.0013	.0001	0	.0017	.0049
6	.0012	.0024	.0082	.0093	.0653	.0596	.0990	.0146	.0019	.0185	.0010	.0001	0	.0016	.0044
7	.0008	.0015	.0065	.0068	.0869	.0448	.0655	.0134	.0015	.0104	.0012	.0001	0	.0015	.0040
8	.0008	.0026	.0056	.0063	.0624	.0362	.0575	.0133	.0016	.164	.0061	0	0	.0021	.0034
9	.0008	.0030	.0052	.0059	.0317	.0340	.0521	.0237	.0019	.0384	.0021	.0001	0	.0015	.0031
10	.0007	.0019	.0048	.0073	.175	.0297	.0843	.0162	.0026	.0221	.0010	0	0	.0013	.0030
11	.0006	.0016	.0043	.0060	.0974	.0423	.122	.0136	.0055	.0137	.0009	0	0	.0020	.0031
12	.0006	.0015	.0040	.0052	.0671	.156	.0894	.0111	.0041	.0105	.0009	.0001	0	.0017	.0029
13	.0007	.0021	.0034	.0044	.0563	.232	.0730	.0101	.0164	.0085	.0283	0	0	.0014	.0061
14	.0009	.0019	.0029	.0062	.0517	.126	.0632	.0096	.0071	.0063	.0065	0	0	.0013	.0067
15	.0008	.0013	.0023	.0048	.361	.0977	.109	.0094	.0037	.0055	.0026	0	0	.0013	.0047
16	.0008	.0012	.0017	.0056	.113	.0717	.161	.0092	.0028	.0046	.0018	0	0	.0012	.0041
17	.0007	.0014	.0029	.0052	.0882	.0556	.154	.0085	.0022	.0046	.0013	0	0	.0012	.0041
18	.0006	.0175	.0030	.0049	.0971	.0448	.005	.0074	.0593	.0133	.0011	0	0	.0012	.0037
19	.0008	.0257	.0020	.0052	.219	.0370	.203	.0066	.176	.0068	.0008	0	0	.0014	.0035
20	.0016	.0088	.0019	.0054	.232	.0380	.132	.0068	.0294	.0054	.0012	0	0	.0012	.0040
21	.0016	.0055	.0027	.0061	.121	.0315	.117	.0069	.0164	.0049	.0007	0	0	.0018	.0041
22	.0011	.0044	.0019	.0210	.0885	.0291	.0801	.0107	.0282	.0042	.0007	0	0	.0025	.0038
23	.0008	.0039	.0024	.0107	.0683	.0266	.0645	.0066	.0210	.0036	.0006	0	0	.0023	.0032
24	.0009	.0037	.0034	.0121	.0594	.0223	.0536	.0051	.0027	.0032	.0004	0	0	.0018	.0028
25	.0011	.0035	.0030	.0087	.0494	.0264	.0471	.0045	.0114	.0024	.0004	0	.0064	.0016	.0022
26	.0008	.0033	.0071	.0072	.140	.0227	.0437	.0039	.0100	.0201	.0002	0	.0497	.0014	.0020
27	.0008	.0032	.0272	.0076	.132	.0379	.0380	.0034	.0088	.0103	.0001	0	.0650	.0012	.0022
28	.0008	.0025	.0072	.0067	.277	.0346	.0325	.0081	.0080	.0040	.0001	0	.0129	.0011	.0023
29	.0008	.0029	.0055	.0192		.0282	.0277	.0041	.0262	.0073	.0005	0	.0067	.0011	.0024
30	.0008	.0040	.0057	.477		.176	.0259	.0032	.0123	.0081	.0003	0	.0046	.0012	.0022
31	.0008		.0046	.171		.0976		.0026		.0037	.0001		.0036		.0020
Total	.0265	.124	.163	.875	3.24	2.41	2.84	.328	.490	.313	.0712	.0009	.149	.0486	.118
Total, 1939															10.88

TABLE 52.—Daily run-off from watershed 97, Oct. 1, 1938, to Dec. 1, 1939

Day	1938			1939											
	October	November	December	January	February	March	April	May	June	July	August	September	October	November	December
	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>
1	0.0008	0.0007	0.0048	0.0054	0.0685	0.125	0.0674	0.0226	0.0026	0.0060	0.0039	0.0003	0.0001	0.0029	0.0019
2	.0007	.0008	.0048	.0066	.155	.0751	.0497	.0189	.0040	.0044	.0032	.0002	.0001	.0023	.0033
3	.0007	.0008	.0072	.0081	.115	.0581	.0406	.0163	.0037	.0036	.0032	.0002	.0001	.0019	.0086
4	.0007	.0008	.0108	.0096	.0631	.0485	.0290	.0168	.0038	.0038	.0036	.0002	.0001	.0018	.0065
5	.0009	.0116	.0094	.0124	.0493	.0725	.0299	.0157	.0021	.0179	.0024	.0002	.0001	.0016	.0054
6	.0013	.0029	.0092	.0096	.0542	.0497	.0994	.0145	.0018	.0249	.0018	.0002	.0001	.0017	.0049
7	.0010	.0017	.0073	.0076	.0792	.0389	.0599	.0134	.0014	.0080	.0018	.0002	.0001	.0017	.0041
8	.0008	.0021	.0063	.0069	.0581	.0329	.0511	.0138	.0013	.289	.0051	.0001	.0001	.0021	.0033
9	.0007	.0030	.0058	.0072	.0508	.0319	.0459	.0217	.0023	.0495	.0029	.0002	.0001	.0016	.0030
10	.0007	.0020	.0054	.0076	.181	.0274	.0776	.0151	.0068	.0250	.0017	.0001	.0001	.0014	.0035
11	.0007	.0016	.0047	.0063	.0964	.0377	.116	.0129	.0061	.0161	.0012	.0001	.0001	.0018	.0036
12	.0007	.0015	.0044	.0056	.0565	.598	.0804	.0109	.0026	.0125	.0010	.0001	.0001	.0018	.0027
13	.0007	.0018	.0038	.0048	.0472	.252	.0564	.0096	.0152	.0101	.0158	.0001	.0001	.0015	.0070
14	.0008	.0021	.0033	.0066	.0345	.122	.0546	.0091	.0063	.0081	.0075	.0001	.0001	.0014	.0062
15	.0009	.0014	.0026	.0048	.421	.0912	.0469	.0091	.0032	.0059	.0029	.0001	.0001	.0013	.0044
16	.0008	.0012	.0024	.0060	.120	.0617	.175	.0091	.0022	.0051	.0020	.0001	.0001	.0012	.0046
17	.0007	.0013	.0024	.0056	.0881	.0473	.164	.0084	.0014	.0046	.0015	.0001	.0001	.0013	.0044
18	.0006	.0173	.0024	.0063	.0951	.0395	.660	.0069	.0580	.0126	.0012	.0001	.0001	.0014	.0038
19	.0006	.0302	.0024	.0048	.230	.0319	.202	.0063	.174	.0071	.0011	.0001	0	.0016	.0040
20	.0013	.0097	.0024	.0048	.257	.0338	.122	.0060		.0277	.0015	.0001	.0001	.0013	.0048
21	.0015	.0057	.0027	.0064	.119	.0283	.0938	.0060	.0167	.0079	.0010	.0001	.0001	.0020	.0042
22	.0012	.0046	.0022	.0228	.0804	.0266	.0674	.0107	.0175	.0078	.0008	.0001	.0001	.0028	.0035
23	.0009	.0043	.0024	.0147	.0595	.0240	.0540	.0060	.0210	.0055	.0006	.0001	.0001	.0025	.0028
24	.0010	.0041	.0036	.0144	.0511	.0226	.0461	.0047	.0114	.0046	.0006	.0001	.0001	.0019	.0035
25	.0010	.0038	.0024	.0094	.0425	.0250	.0413	.0042	.0088	.0040	.0004	.0001	.0057	.0017	.0022
26	.0009	.0036	.0064	.0078	.148	.0210	.0389	.0034	.0069	.0254	.0004	.0001	.0534	.0016	.0029
27	.0008	.0034	.0277	.0080	.136	.0335	.0348	.0024	.0060	.0134	.0003	.0001	.0700	.0012	.0027
28	.0008	.0028	.0095	.0071	.291	.0319	.0302	.0067	.0056	.0061	.0003	.0001	.0145	.0012	.0030
29	.0003	.0029	.0066	.0185		.0276	.0257	.0040	.0168	.0076	.0002	.0001	.0063	.0012	.0028
30	.0008	.0045	.0066	.506		.192	.0257	.0030	.0105	.0110	.0005	.0002	.0044	.0015	.0027
31	.0008		.0054	.175		.0937		.0024		.0059	.0005		.0035		.0022
Total	.0266	.134	.157	.927	3.25	2.40	2.68	.311	.449	.641	.0709	.0040	.160	.0512	.128
Total, 1939															11.07

TABLE 53.—Daily run-off from watershed 5, Oct. 1, 1938, to Dec. 31, 1939

Day	1938			1939											
	October	November	December	January	February	March	April	May	June	July	August	September	October	November	December
	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>
1.....	0.0014	0.0010	0.0045	0.0038	0.107	0.149	0.0816	0.0306	0.0053	0.0095	0.0021	0.0006	0.0016	0.0020	0.0030
2.....	.0020	.0009	.0054	.0091	.185	.120	.0672	.0254	.0061	.0068	.0017	.0004	.0013	.0014	.0108
3.....	.0020	.0009	.0102	.0092	.124	.103	.0558	.0246	.0075	.0056	.0023	.0008	.0009	.0013	.0064
4.....	.0020	.0010	.0119	.0114	.0872	.0888	.0474	.0217	.0044	.0202	.0023	.0009	.0008	.0012	.0049
5.....	.0027	.0078	.0109	.0177	.0690	.110	.0415	.0196	.0033	.0232	.0015	.0012	.0007	.0012	.0040
6.....	.0031	.0024	.0090	.0105	.0818	.0786	.116	.0176	.0025	.0123	.0014	.0010	.0007	.0012	.0036
7.....	.0028	.0021	.0066	.0075	.0973	.0570	.0726	.0162	.0021	.0069	.0015	.0010	.0006	.0013	.0031
8.....	.0025	.0045	.0059	.0065	.0726	.0474	.0659	.0171	.0027	.0570	.0037	.0012	.0007	.0021	.0023
9.....	.0022	.0032	.0057	.0065	.0771	.0420	.0607	.0268	.0026	.0201	.0019	.0012	.0008	.0014	.0022
10.....	.0017	.0024	.0049	.0081	.205	.0360	.0975	.0181	.0050	.0143	.0013	.0013	.0010	.0013	.0031
11.....	.0014	.0021	.0046	.0060	.110	.0554	.140	.0155	.0064	.0090	.0012	.0015	.0012	.0013	.0038
12.....	.0010	.0020	.0042	.0054	.0842	.518	.103	.0126	.0031	.0071	.0012	.0012	.0011	.0013	.0033
13.....	.0010	.0033	.0035	.0046	.0714	.227	.0840	.0112	.0243	.0060	.0144	.0010	.0013	.0013	.0079
14.....	.0014	.0024	.0029	.0057	.0664	.140	.0813	.0105	.0058	.0044	.0033	.0008	.0013	.0013	.0042
15.....	.0010	.0021	.0017	.0058	.352	.127	.132	.0102	.0036	.0036	.0018	.0008	.0013	.0013	.0035
16.....	.0011	.0024	.0012	.0060	.133	.0972	.161	.0108	.0026	.0032	.0014	.0012	.0013	.0013	.0030
17.....	.0010	.0032	.0035	.0058	.117	.0762	.158	.0090	.0018	.0031	.0012	.0012	.0005	.0015	.0031
18.....	.0009	.0019	.0035	.0064	.132	.0600	.524	.0076	.0895	.0124	.0013	.0012	.0005	.0026	.0025
19.....	.0016	.0037	.0015	.0059	.255	.0510	.219	.0067	.171	.0056	.0010	.0012	.0005	.0018	.0031
20.....	.0043	.0089	.0012	.0052	.251	.0480	.156	.0075	.0263	.0046	.0013	.0012	.0005	.0015	.0037
21.....	.0024	.0054	.0031	.0069	.145	.0378	.131	.0106	.0154	.0033	.0011	.0012	.0005	.0024	.0028
22.....	.0013	.0044	.0022	.0237	.118	.0342	.104	.0108	.0817	.0027	.0008	.0008	.0006	.0031	.0022
23.....	.0012	.0042	.0029	.0090	.0868	.0330	.0834	.0067	.0369	.0024	.0008	.0004	.0009	.0020	.0015
24.....	.0018	.0036	.0039	.0111	.0786	.0297	.0696	.0055	.0206	.0020	.0008	.0007	.0007	.0016	.0016
25.....	.0015	.0037	.0036	.0073	.0618	.0303	.0624	.0046	.0150	.0023	.0008	.0007	.0007	.0061	.0012
26.....	.0022	.0037	.0083	.0057	.146	.0265	.0569	.0043	.0090	.0297	.0008	.0006	.0197	.0012	.0017
27.....	.0026	.0035	.0036	.0068	.140	.0492	.0504	.0043	.0078	.0034	.0008	.0007	.0569	.0011	.0018
28.....	.0024	.0029	.0032	.0062	.293	.0369	.0452	.0098	.0074	.0030	.0008	.0004	.0070	.0012	.0020
29.....	.0019	.0036	.0039	.0230	-----	.0315	.0366	.0045	.0656	.0085	.0010	.0003	.0029	.0011	.0019
30.....	.0015	.0053	.0049	.608	-----	.173	.0348	.0037	.0170	.0076	.0008	.0005	.0023	.0018	.0019
31.....	.0012	-----	.0037	.185	-----	.0948	-----	.0033	-----	.0030	.0008	-----	.0020	-----	.0015
Total.....	.0571	.160	.176	1.04	3.75	2.81	3.14	.388	.652	.308	.0571	.0272	.118	.0465	.102
Total, 1939.....															12.44

TABLE 54.—Daily run-off from watershed 10, Oct. 1, 1938, to Dec. 31, 1939

Day	1938			1939											
	October	November	December	January	February	March	April	May	June	July	August	September	October	November	December
	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>
1.....	0	0	0.0016	0.0027	0.0357	0.0853	0.0481	0.0127	0.0047	0.0168	0.0032	0.0004	0	0.0020	0
2.....	0	0	.0012	.0034	.117	.0558	.0350	.0119	.0058	.0144	.0028	0	0	.0018	.0036
3.....	0	0	.0014	.0032	.0687	.0443	.0269	.0096	.0058	.0144	.0014	0	0	.0008	.0037
4.....	0	0	.0025	.0050	.0388	.0392	.0240	.0096	.0058	.0185	.0020	0	0	.0008	.0037
5.....	.0009	.0024	.0045	.0040	.0323	.0702	.0240	.0096	.0047	.0154	.0020	0	0	.0007	.0028
6.....	.0010	.0008	.0049	.0026	.0419	.0422	.0963	.0084	.0019	.0221	.0020	0	0	0	.0019
7.....	.0001	.0004	.0029	.0020	.0546	.0286	.0466	.0076	.0037	.0085	.0020	0	0	0	.0018
8.....	0	.0016	.0016	.0020	.0380	.0268	.0375	.0085	.0037	.162	.0038	0	0	.0017	.0008
9.....	0	.0014	.0018	.0020	.0439	.0234	.0344	.0206	.0040	.0174	.0020	0	0	.0007	.0008
10.....	.0004	.0007	.0016	.0020	.134	.0205	.0695	.0099	.0065	.0101	.0009	0	0	.0008	.0015
11.....	.0008	.0008	.0014	.0021	.0583	.0367	.0954	.0068	.0065	.0067	.0048	0	0	.0008	.0015
12.....	.0008	.0004	.0016	.0021	.0350	.530	.0619	.0059	.0047	.0058	.0072	0	0	.0008	.0007
13.....	.0008	.0005	.0020	.0108	.0307	.170	.0451	.0058	.0111	.0058	.0523	0	0	0	.0044
14.....	.0004	.0004	.0030	.0101	.0314	.0847	.0455	.0058	.0058	.0051	.0072	0	0	0	.0028
15.....	0	0	.0039	.0196	.324	.0645	.0969	.0058	.0035	.0046	.0072	0	0	0	.0075
16.....	0	0	.0088	.0158	.0803	.0457	.127	.0058	.0058	.0041	.0031	0	0	0	.0045
17.....	0	0	.0032	.0120	.0625	.0353	.133	.0058	.0058	.0037	.0020	0	0	0	.0017
18.....	0	.0125	.0024	.0096	.0785	.0257	.550	.0042	.0545	.0081	.0020	0	0	0	.0015
19.....	0	.0093	.0085	.0096	.200	.0241	.136	.0048	.131	.0058	.0022	0	0	0	.0018
20.....	0	.0031	.0104	.0096	.197	.0216	.0804	.0042	.0146	.0050	.0020	0	0	0	.0024
21.....	0	.0020	.0024	.0073	.0816	.0212	.0711	.0041	.0070	.0058	.0020	0	0	0	.0054
22.....	0	.0016	.0034	.0123	.0591	.0180	.0504	.0038	.0122	.0058	.0012	0	0	0	.0064
23.....	0	.0020	.0031	.0125	.0388	.0168	.0398	.0037	.0089	.0041	.0012	0	0	0	.0059
24.....	0	.0058	.0020	.0144	.0264	.0176	.0342	.0037	.0058	.0037	.0020	0	0	0	.0058
25.....	0	.0096	.0020	.0213	.0204	.0196	.0286	.0037	.0058	.0037	.0012	0	.0084	0	.0058
26.....	0	.0072	.0190	.0384	.167	.0165	.0259	.0037	.0040	.0259	.0006	0	.0512	0	.0058
27.....	0	.0072	.0158	.0384	.113	.0345	.0214	.0037	.0096	.0073	0	0	.0595	0	.0058
28.....	0	.0072	.0070	.0384	.259	.0258	.0189	.0068	.0096	.0041	0	0	.0075	0	.0058
29.....	0	.0087	.0058	.0288	-----	.0193	.0168	.0047	.0179	.0061	0	0	.0028	0	.0053
30.....	0	.0024	.0058	.404	-----	.166	.0152	.0037	.0168	.0067	.0008	0	.0022	0	.0048
31.....	0	-----	.0047	.0839	-----	.0601	-----	.0019	-----	.0041	.0014	-----	.0019	-----	.0048
Total.....	.0052	.0880	.140	.830	2.18	1.89	2.14	.207	.388	.432	.122	.0004	.134	.0109	.111
Total, 1939.....															8.45

TABLE 55.—Daily run-off from watershed 11, Oct. 1, 1938, to Dec. 31, 1939

Day	1938			1939											
	October	November	December	January	February	March	April	May	June	July	August	September	October	November	December
	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>
1	0.0010	0.0011	0.0033	0.0044	0.107	0.136	0.0793	0.0210	0.0037	0.0037	0.0026	0.0002	0.0007	0.0030	0.0024
2	.0009	.0010	.0036	.0056	.162	.0863	.0597	.0181	.0039	.0029	.0025	.0002	.0001	.0024	.0100
3	.0009	.0008	.0065	.0065	.124	.0655	.0460	.0160	.0053	.0025	.0020	.0002	0	.0021	.0070
4	.0005	.0010	.0070	.0069	.0783	.0556	.0365	.0149	.0037	.0094	.0019	.0001	0	.0020	.0054
5	.0012	.0055	.0073	.0103	.0609	.0802	.0337	.0137	.0027	.0093	.0014	.0003	0	.0020	.0046
6	.0012	.0019	.0063	.0075	.0612	.0571	.0966	.0128	.0023	.0127	.0011	0	0	.0020	.0042
7	.0008	.0015	.0049	.0059	.0797	.0428	.0653	.0125	.0021	.0048	.0016	.0006	0	.0023	.0035
8	.0008	.0029	.0045	.0051	.0649	.0355	.0586	.0127	.0025	.145	.0051	.0008	0	.0023	.0028
9	.0007	.0025	.0042	.0050	.0641	.0327	.0512	.0259	.0027	.0335	.0017	.0002	0	.0018	.0028
10	.0007	.0015	.0039	.0064	.184	.0285	.0834	.0174	.0049	.0154	.0011	.0002	0	.0017	.0032
11	.0008	.0014	.0034	.0053	.104	.0413	.124	.0135	.0048	.0090	.0008	0	.0001	.0024	.0032
12	.0008	.0014	.0032	.0049	.0668	.547	.0956	.0111	.0024	.0069	.0006	0	0	.0018	.0026
13	.0012	.0024	.0028	.0046	.0531	.241	.0726	.0101	.0151	.0060	.0399	.0001	0	.0015	.0072
14	.0012	.0018	.0025	.0053	.0481	.125	.0657	.0093	.0039	.0050	.0050	.0002	0	.0015	.0051
15	.0010	.0013	.0019	.0044	.381	.0914	.104	.0086	.0025	.0039	.0026	.0002	0	.0014	.0038
16	.0009	.0014	.0017	.0051	.132	.0649	.165	.0083	.0020	.0035	.0019	0	.0001	.0014	.0042
17	.0007	.0014	.0023	.0048	.0912	.0514	.165	.0084	.0016	.0033	.0016	0	.0002	.0014	.0040
18	.0008	.0023	.0026	.0055	.0955	.0397	.548	.0060	.0536	.0105	.0014	0	.0002	.0014	.0035
19	.0018	.00215	.0015	.0050	.251	.0323	.197	.0054	.122	.0048	.0011	0	.0002	.0017	.0039
20	.0027	.0057	.0015	.0044	.257	.0328	.121	.0053	.0237	.0045	.0009	0	.0002	.0014	.0044
21	.0023	.0038	.0021	.0061	.126	.0285	.0937	.0062	.0122	.0042	.0008	0	.0001	.0024	.0038
22	.0019	.0031	.0017	.0230	.0860	.0252	.0702	.0066	.0154	.0033	.0007	0	.0004	.0031	.0030
23	.0016	.0027	.0022	.0113	.0625	.0209	.0589	.0047	.0099	.0030	.0006	0	.0002	.0023	.0030
24	.0015	.0027	.0030	.0122	.0565	.0200	.0500	.0039	.0066	.0028	.0006	0	.0005	.0020	.0027
25	.0012	.0026	.0027	.0086	.0459	.0222	.0434	.0035	.0050	.0022	.0002	0	.0172	.0016	.0025
26	.0010	.0026	.0102	.0065	.130	.0190	.0393	.0032	.0042	.0233	.0002	0	.0799	.0015	.0028
27	.0009	.0024	.0260	.0059	.135	.0345	.0341	.0031	.0041	.0074	0	0	.0761	.0012	.0027
28	.0010	.0020	.0056	.0056	.303	.0306	.0299	.0070	.0036	.0035	0	0	.0134	.0013	.0029
29	.0011	.0026	.0048	.0219	.0251	.0261	.0261	.0035	.0162	.0072	.0046	0	.0067	.0013	.0028
30	.0012	.0029	.0040	.521	.182	.0247	.0031	.0057	.0074	.0014	.0014	.0005	.0048	.0016	.0025
31	.0012	.0038	.202	.102	.102	.102	.0027	.0027	.0032	.0005	.0005	.0038	.0038	.0019	.0019
Total	.0355	.107	.141	.937	3.41	2.40	2.74	.298	.348	.364	.0864	.0038	.205	.0558	.118
Total, 1939															10.97

TABLE 56.—Daily run-off from watershed 13, Oct. 1, 1938, to Dec. 31, 1939

Day	1938			1939											
	October	November	December	January	February	March	April	May	June	July	August	September	October	November	December
	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>
1	0.0005	0.0004	0.0013	0.0060	0.0595	0.110	0.0978	0.0231	0.0019	0.0036	0.0033	0.0001	0	0.0022	0.0022
2	.0006	.0004	.0011	.0077	.157	.0686	.0670	.0202	.0029	.0025	.0026	.0001	0	.0016	.0100
3	.0006	.0004	.0014	.0082	.123	.0538	.0518	.0168	.0048	.0020	.0034	.0001	0	.0014	.0101
4	.0005	.0007	.0027	.0089	.0736	.0470	.0415	.0153	.0023	.0075	.0031	.0001	0	.0014	.0078
5	.0009	.0069	.0062	.0104	.0564	.0624	.0333	.0136	.0010	.0095	.0017	0	0	.0014	.0072
6	.0008	.0019	.0105	.0102	.0514	.0470	.120	.0130	.0008	.0350	.0014	0	0	.0013	.0062
7	.0003	.0016	.0090	.0170	.0675	.0344	.0709	.0120	.0006	.0066	.0016	0	0	.0015	.0058
8	.0006	.0034	.0076	.0147	.0511	.0316	.0628	.0123	.0013	.697	.0048	0	0	.0015	.0054
9	.0006	.0026	.0070	.0085	.0503	.0323	.0527	.0265	.0015	.123	.0020	0	0	.0010	.0052
10	.0006	.0018	.0059	.0093	.170	.0296	.0901	.0172	.0130	.0395	.0012	0	0	.0013	.0047
11	.0006	.0015	.0049	.0066	.0834	.0493	.117	.0129	.0077	.0202	.0009	0	0	.0017	.0032
12	.0005	.0016	.0042	.0054	.0548	.706	.0830	.0107	.0019	.0149	.0010	0	0	.0014	.0027
13	.0006	.0025	.0039	.0048	.0428	.300	.0615	.0097	.0280	.0105	.0046	0	0	.0011	.0084
14	.0006	.0020	.0032	.0059	.0404	.170	.0577	.0092	.0064	.0074	.0024	0	0	.0012	.0065
15	.0006	.0015	.0026	.0063	.434	.148	.126	.0087	.0029	.0053	.0012	0	0	.0012	.0054
16	.0005	.0015	.0023	.0062	.113	.120	.180	.0088	.0019	.0043	.0009	0	0	.0010	.0052
17	.0005	.0012	.0019	.0064	.0766	.0922	.186	.0075	.0011	.0045	.0009	0	0	.0011	.0048
18	.0005	.0296	.0018	.0058	.0764	.0773	.795	.0062	.107	.0183	.0006	0	0	.0012	.0042
19	.0006	.0402	.0020	.0061	.189	.0700	.213	.0057	.358	.0082	.0007	0	0	.0014	.0047
20	.0012	.0117	.0032	.0079	.234	.0687	.113	.0060	.0520	.0193	.0013	0	0	.0012	.0054
21	.0008	.0080	.0032	.0089	.0965	.0557	.0907	.0062	.0203	.0102	.0007	0	0	.0022	.0044
22	.0008	.0057	.0025	.0297	.0657	.0443	.0687	.0111	.0271	.0065	.0005	0	0	.0029	.0037
23	.0008	.0040	.0030	.0151	.0513	.0336	.0562	.0049	.0188	.0049	.0006	0	0	.0024	.0039
24	.0008	.0029	.0033	.0137	.0461	.0337	.0463	.0036	.0107	.0039	.0005	0	0	.0022	.0032
25	.0008	.0023	.0029	.0103	.0381	.0424	.0415	.0029	.0074	.0032	.0003	0	.0076	.0016	.0030
26	.0008	.0020	.0166	.0094	.138	.0313	.0369	.0023	.0053	.0297	.0002	0	.0284	.0014	.0034
27	.0008	.0018	.0442	.0078	.116	.0645	.0358	.0021	.0045	.0138	.0001	0	.0732	.0012	.0034
28	.0008	.0016	.0091	.0084	.296	.0648	.0317	.0064	.0042	.0054	.0001	0	.0116	.0012	.0032
29	.0004	.0015	.0081	.0276	.0574	.0266	.0266	.0023	.0130	.0096	.0001	0	.0049	.0013	.0030
30	.0004	.0015	.0073	.513	.286	.0251	.0018	.0063	.0121	.0002	.0002	0	.0034	.0015	.0030
31	.0004	.0058	.137	.140	.140	.140	.0013	.0013	.0048	.0002	.0002	.0027	.0027	.0025	.0025
Total	.0198	.145	.189	.943	3.05	3.17	3.08	.300	.715	1.14	.0431	.0004	.132	.0450	.152
Total, 1939															12.77

TABLE 57.—Daily run-off from watershed 20, Oct. 1, 1938, to Dec. 31, 1939

Day	1938			1939											
	October	November	December	January	February	March	April	May	June	July	August	September	October	November	December
	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>
1	0.0006	0.0006	0.0025	0.0038	0.0471	0.0790	0.0516	0.0140	0.0014	0.0029	0.0039	0.0004	0.0004	0.0017	0.0013
2	.0006	.0006	.0027	.0032	.135	.0544	.0377	.0124	.0014	.0023	.0034	.0004	.0002	.0009	.0033
3	.0006	.0006	.0056	.0041	.0796	.0435	.0290	.0110	.0021	.0018	.0037	.0004	.0001	.0012	.0061
4	.0006	.0007	.0068	.0047	.0511	.0384	.0249	.0095	.0014	.0070	.0038	.0004	.0002	.0011	.0049
5	.0008	.0031	.0067	.0079	.0435	.0581	.0224	.0087	.0010	.0091	.0031	.0006	.0002	.0011	.0040
6	.0008	.0011	.0058	.0061	.0511	.0374	.0916	.0081	.0009	.0744	.0027	.0004	.0002	.0011	.0038
7	.0007	.0010	.0041	.0048	.0664	.0288	.0440	.0079	.0006	.0046	.0031	.0004	.0001	.0010	.0030
8	.0007	.0016	.0039	.0045	.0466	.0287	.0406	.0079	.0014	.513	.0045	.0002	.0001	.0011	.0025
9	.0006	.0012	.0036	.0043	.0568	.0279	.0365	.0135	.0011	.0468	.0040	.0002	0	.0013	.0023
10	.0004	.0009	.0032	.0050	.181	.0241	.0638	.0098	.0133	.0176	.0025	.0005	0	.0010	.0026
11	.0006	.0010	.0029	.0041	.0657	.0342	.0828	.0076	.0046	.0143	.0016	.0003	.0005	.0013	.0024
12	.0005	.0010	.0026	.0037	.0435	.742	.0574	.0062	.0014	.0130	.0014	.0002	.0002	.0010	.0021
13	.0008	.0011	.0023	.0035	.0352	.162	.0425	.0058	.0184	.0091	.0021	.0001	.0003	.0009	.0052
14	.0007	.0010	.0021	.0041	.0348	.0776	.0422	.0055	.0035	.0061	.0029	.0002	.0005	.0009	.0041
15	.0006	.0008	.0015	.0035	.461	.0619	.138	.0054	.0017	.0057	.0018	.0004	.0003	.0009	.0033
16	.0006	.0008	.0018	.0038	.0820	.0430	.151	.0049	.0012	.0054	.0012	.0001	.0003	.0010	.0032
17	.0004	.0008	.0019	.0036	.0687	.0352	.146	.0038	.0009	.0053	.0009	.0002	.0002	.0011	.0031
18	.0005	.0181	.0019	.0042	.0708	.0264	.843	.0035	.0820	.0142	.0010	0	.0002	.0011	.0027
19	.0003	.0240	.0013	.0037	.179	.0240	.123	.0030	.160	.0076	.0010	.0001	.0002	.0010	.0030
20	.0010	.0051	.0015	.0036	.234	.0216	.0762	.0027	.0217	.170	.0019	.0002	.0004	.0010	.0035
21	.0009	.0032	.0016	.0051	.0789	.0207	.0660	.0026	.0120	.0237	.0015	.0002	.0004	.0017	.0031
22	.0008	.0026	.0014	.0264	.0600	.0198	.0491	.0035	.0245	.0153	.0013	.0001	.0004	.0019	.0025
23	.0007	.0023	.0016	.0091	.0480	.0190	.0405	.0026	.0152	.0114	.0012	.0001	.0004	.0016	.0024
24	.0008	.0023	.0019	.0085	.0398	.0182	.0349	.0020	.0084	.0103	.0010	0	.0004	.0014	.0024
25	.0006	.0020	.0018	.0066	.0334	.0174	.0288	.0018	.0059	.0099	.0008	0	.0084	.0011	.0023
26	.0006	.0020	.0113	.0058	.152	.0167	.0281	.0016	.0042	.0543	.0008	0	.0357	.0010	.0025
27	.0007	.0018	.0241	.0050	.107	.0263	.0245	.0014	.0039	.0152	.0007	.0001	.0821	.0010	.0024
28	.0005	.0016	.0050	.0055	.281	.0244	.0192	.0031	.0038	.0119	.0006	.0002	.0075	.0008	.0021
29	.0005	.0018	.0041	.0218		.0172	.0168	.0017	.0056	.0160	.0005	.0001	.0034	.0007	.0021
30	.0003	.0026	.0032	.602		.216	.0160	.0014	.0040	.0149	.0005	.0008	.0024	.0010	.0022
31	.0006		.0028	.0990		.0681		.0011		.0077	.0002		.0020		.0022
Total	.0194	.0873	.124	.881	2.83	2.11	2.47	.174	.408	1.12	.0596	.0073	.148	.0339	.976
Total, 1939															10.34

TABLE 58.—Daily run-off from watershed 172, Feb. 1, to Oct. 31, 1939¹

Day	February	March	April	May	June	July	August	September	October
	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>
1	0.0980	0.143	0.100	0.0228	0.0027	0.0058	0.0052	0.0004	0.0010
2	.188	.104	.0768	.0192	.0038	.0045	.0042	.0004	.0002
3	.118	.0816	.0600	.0192	.0036	.0037	.0041	.0004	.0030
4	.0852	.0660	.0528	.0168	.0011	.0075	.0041	.0015	.0033
5	.0792	.957	.0444	.0144	.0010	.0075	.0034	.0024	.0043
6	.0902	.0630	.155	.0144	.0012	.0220	.0027	.0020	.0035
7	.0954	.0470	.0900	.0144	.0010	.0078	.0025	.0016	.0033
8	.0744	.0442	.0877	.0148	.0022	.822	.0029	.0013	.0028
9	.0841	.0372	.0588	.0222	.0026	.121	.0024	.0045	.0021
10	.186	.0324	.105	.0192	.0108	.0532	.0018	.0087	.0059
11	.0997	.0555	.135	.0156	.0052	.0360	.0014	.0068	.0030
12	.0756	.683	.0996	.0132	.0021	.0314	.0011	.0052	.0034
13	.0658	.303	.0780	.0096	.0215	.0213	.0016	.0040	.0024
14	.0574	.166	.0759	.0096	.0071	.0170	.0021	.0030	.0024
15	.503	.120	.173	.0070	.0036	.0116	.0016	.0024	.0024
16	.145	.0816	.210	.0060	.0021	.0074	.0012	.0020	.0024
17	.130	.0684	.237	.0060	.0016	.0054	.0010	.0015	.0024
18	.130	.0564	.810	.0060	.108	.0151	.0009	.0012	.0024
19	.210	.0516	.231	.0060	.417	.0084	.0012	.0016	.0024
20	.262	.0468	.142	.0062	.0726	.0829	.0015	.0024	.0024
21	.137	.0408	.120	.0064	.0422	.0217	.0011	.0020	.0024
22	.112	.0324	.0864	.0107	.0662	.0144	.0009	.0015	.0024
23	.0984	.0300	.0672	.0059	.0449	.0101	.0008	.0012	.0024
24	.0960	.0270	.0564	.0046	.0287	.0071	.0006	.0010	.0024
25	.0912	.0302	.0495	.0033	.0227	.0049	.0005	.0009	.0161
26	.0988	.0271	.0448	.0030	.0147	.0142	.0005	.0007	.0103
27	.144	.0501	.0372	.0032	.0092	.0081	.0005	.0006	.0441
28	.311	.0444	.0324	.0058	.0069	.0055	.0004	.0005	.0120
29		.0454	.0300	.0030	.0095	.0111	.0004	.0022	.0096
30		.290	.0263	.0026	.0087	.0153	.0004	.0089	.0060
31		.131		.0023		.0072	.0004		.0048
Total	3.86	3.09	3.57	.313	.924	1.41	.0534	.0728	.168

¹ Record began Feb. 1. November and December run-off was mainly base flow; records poor because of ice.

TABLE 59.—Daily run-off from watershed 183, Oct. 1, 1938, to Dec. 31, 1939

Day	1938			1939											
	October	November	December	January	February	March	April	May	June	July	August	September	October	November	December ¹
	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>
1	0	0	0	0.0144	0.0647	0.0704	0.0456	0.0051	0.0032	0.0053	0.0192	0	0	0.0096	0
2	0	0	0	.0090	.178	.0512	.0284	.0045	.0054	.0045	.0154	0	0	.0096	0
3	0	0	.0011	.0061	.0971	.0374	.0207	.0038	.0048	.0038	.0252	0	0	.0090	0
4	0	0	.0013	.0035	.0568	.0290	.0165	.0035	.0035	.0157	.0154	0	0	.0072	0
5	0	0	.0014	.0026	.0486	.0631	.0122	.0032	.0004	.0147	.0109	0	0	.0072	0
6	0	0	.0010	.0015	.0612	.0284	.0958	.0029	0	.0368	.0083	0	0	.0072	0
7	0	0	.0010	.0006	.0735	.0188	.0390	.0026	0	.0051	.0060	0	0	.0072	0
8	0	0	.0010	.0006	.0415	.0153	.0292	.0026	0	.630	.0107	0	0	.0072	0
9	0	0	.0010	.0003	.0531	.0132	.0274	.0086	0	.0453	.0045	0	0	.0072	0
10	0	0	.0010	.0003	.176	.0096	.0621	.0037	.0108	.0237	.0038	0	0	.0072	0
11	0	0	.0008	0	.0588	.0361	.0899	.0041	.0045	.0178	.0035	0	0	.0066	0
12	0	0	0	0	.0430	.471	.0545	.0027	.0004	.0168	.0052	0	0	.0060	0
13	0	0	0	.0117	.0312	.137	.0369	.0032	.0249	.0125	.0237	0	0	.0048	.0062
14	0	0	0	.0229	.0314	.0794	.0370	.0029	.0033	.0076	.0029	0	0	.0042	-----
15	0	0	0	0	.426	.0593	.125	.0024	.0012	.0072	.0027	0	0	.0036	-----
16	0	0	0	0	.0865	.0396	.159	.0019	.0006	.0058	.0026	0	0	.0024	-----
17	0	0	0	.0006	.0731	.0268	.137	.0013	.0003	.0041	.0021	0	0	.0024	-----
18	0	.0095	0	.0010	.0828	.0194	.650	.0013	.180	.0100	.0016	0	0	.0024	-----
19	0	.0263	0	.0010	.158	.0152	.147	.0014	.450	.0058	.0016	0	0	.0024	-----
20	0	.0014	0	.0010	.183	.0153	.0857	.0010	.0458	.236	.0013	0	0	.0024	-----
21	0	.0010	0	.0013	.0764	.0106	.0686	.0060	.0252	.0156	.0010	0	0	.0024	-----
22	0	.0010	0	.0326	.0591	.0085	.0452	.0051	.126	.0096	.0010	0	0	.0024	-----
23	0	.0010	0	.0022	.0387	.0061	.0296	.0026	.0435	.0077	.0006	0	0	.0024	-----
24	0	.0008	0	.0019	.0288	.0050	.0226	.0012	.0238	.0065	.0006	0	0	.0024	-----
25	0	0	0	.0019	.0240	.0050	.0187	.0006	.0182	.0044	.0003	0	.0036	.0024	-----
26	0	0	.0087	.0016	.148	.0067	.0184	.0006	.0138	.0987	.0003	0	.0288	.0024	-----
27	0	0	.0261	.0013	.0993	.0244	.0153	.0004	.0112	.0178	0	0	.113	.0024	-----
28	0	0	.0010	.0254	.230	.0151	.0106	.0003	.0080	.0168	0	0	.0120	.0024	-----
29	0	0	.0010	.0649	-----	.0093	.0088	.0003	.0061	.103	0	0	.0120	.0024	-----
30	0	0	.0185	.490	-----	.170	.0064	0	.0062	.0865	0	0	.0114	.0012	-----
31	0	-----	.0216	.113	-----	.0524	-----	0	-----	.0230	0	-----	.0096	-----	-----
Total	0	.0410	.0865	.813	2.73	1.55	2.14	.0798	1.02	1.50	.170	0	.190	.139	-----
Total, 1939	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	10.33

¹ Mainly base flow; record poor because of ice.

TABLE 60.—Daily run-off from watershed 196, Oct. 1, 1938, to Dec. 31, 1939.

Day	1938			1939											
	October	November	December	January	February	March	April	May	June	July	August	September	October	November	December
	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>
1	0.0022	0.0024	0.0046	0.0057	0.0672	0.122	0.0653	0.0246	0.0049	0.0082	0.0140	0.0020	0.0024	0.0047	0.0039
2	.0029	.0024	.0053	.0086	.198	.0883	.0522	.0222	.0064	.0066	.0118	.0018	.0021	.0043	.0208
3	.0028	.0024	.0118	.0096	.119	.0722	.0404	.0192	.0125	.0060	.0168	.0021	.0020	.0037	.0105
4	.0021	.0027	.0115	.0108	.0736	.0630	.0353	.0168	.0051	.0454	.0104	.0032	.0021	.0036	.0050
5	.0033	.0084	.0103	.0168	.0646	.0879	.0318	.0156	.0040	.0148	.0077	.0025	.0022	.0036	.0068
6	.0037	.0032	.0086	.0113	.0736	.0564	.127	.0141	.0036	.0582	.0065	.0024	.0019	.0036	.0062
7	.0035	.0027	.0070	.0083	.0948	.0418	.0624	.0129	.0034	.0096	.0073	.0023	.0018	.0041	.0034
8	.0033	.0055	.0063	.0076	.0679	.0362	.0587	.0131	.0047	.476	.0146	.0022	.0018	.0039	.0049
9	.0043	.0036	.0062	.0075	.0800	.0360	.0519	.0224	.0054	.0683	.0059	.0022	.0016	.0031	.0047
10	.0030	.0030	.0056	.0085	.312	.0294	.0919	.0154	.0319	.0555	.0047	.0022	.0021	.0035	.0052
11	.0020	.0028	.0052	.0070	.0904	.0524	.122	.0122	.0118	.0420	.0044	.0022	.0025	.0043	.0048
12	.0023	.0028	.0049	.0064	.0668	.594	.0817	.0101	.0063	.0360	.0042	.0020	.0020	.0034	.0042
13	.0030	.0037	.0044	.0070	.0516	.199	.0624	.0092	.0400	.0309	.0104	.0020	.0019	.0029	.0135
14	.0032	.0033	.0038	.0070	.0613	.122	.0644	.0088	.0078	.0109	.0053	.0020	.0023	.0029	.0073
15	.0030	.0027	.0030	.0106	.447	.0978	.158	.0087	.0050	.0091	.0044	.0020	.0023	.0029	.0058
16	.0030	.0028	.0028	.0068	.114	.0720	.196	.0086	.0042	.0081	.0039	.0020	.0021	.0027	.0060
17	.0027	.0030	.0041	.0064	.0953	.0566	.168	.0079	.0036	.0073	.0037	.0020	.0021	.0032	.0065
18	.0022	.0661	.0040	.0068	.111	.0426	.653	.0070	.225	.0215	.0035	.0019	.0020	.0033	.0067
19	.0032	.0541	.0030	.0065	.210	.0363	.192	.0065	.478	.0087	.0040	.0023	.0020	.0035	.0072
20	.0038	.0099	.0036	.0058	.251	.0379	.128	.0065	.0733	.126	.0039	.0018	.0020	.0033	.0076
21	.0032	.0068	.0038	.0073	.119	.0312	.106	.0104	.0450	.0190	.0035	.0023	.0022	.0048	.0068
22	.0037	.0056	.0031	.0327	.0892	.0276	.0784	.0291	.103	.0097	.0029	.0024	.0022	.0048	.0053
23	.0028	.0054	.0037	.0123	.0676	.0240	.0637	.0071	.0489	.0094	.0030	.0025	.0020	.0037	.0053
24	.0035	.0047	.0042	.0137	.0608	.0241	.0530	.0058	.0278	.0080	.0029	.0025	.0020	.0035	.0057
25	.0030	.0045	.0037	.0099	.0472	.0259	.0463	.0053	.0204	.0064	.0023	.0025	.0563	.0030	.0061
26	.0030	.0041	.0179	.0100	.147	.0223	.0432	.0051	.0158	.0641	.0023	.0024	.0778	.0027	.0059
27	.0029	.0041	.0440	.0087	.125	.0409	.0394	.0049	.0136	.0115	.0022	.0025	.0394	.0026	.0058
28	.0025	.0040	.0083	.0075	.311	.0330	.0339	.0070	.0130	.0074	.0021	.0027	.0130	.0026	.0058
29	.0027	.0042	.0073	.0285	-----	.0252	.0274	.0048	.0132	.0677	.0022	.0032	.0100	.0027	.0057
30	.0025	.0053	.0064	.469	-----	.203	.0290	.0043	.0115	.0711	.0022	.0052	.0080	.0032	.0053
31	.0024	-----	.0058	.118	-----	.0790	-----	.0035	-----	.0180	.0021	-----	.0060	-----	.0052
Total	.0917	.236	.224	.883	3.62	2.48	2.96	.349	1.25	1.34	.175	.0713	.415	.104	.209
Total, 1939	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	13.86

TABLE 61.—Run-off from watershed 91 for selected storms, 1939

[Area 293 acres; rainfall measured at recording rain gages 1, 7, 8]

STORM OF FEB. 14-15, TOTAL RAINFALL 1.34 INCHES				STORM OF JUNE 18-19, TOTAL RAINFALL 3.06 INCHES				STORM OF JUNE 18-19, TOTAL RAINFALL 3.06 INCHES—Continued			
Date and time	Discharge ¹	Accumulated run-off		Date and time	Discharge ¹	Accumulated run-off		Date and time	Discharge ¹	Accumulated run-off	
Feb. 14:				June 18:				July 19—Con.			
8:20 p. m.-----	Sec.-ft. 0.764	In. per hr. 0.0026	In. 0	7:30 a. m.-----	Sec.-ft. 0.096	In. per hr. 0.0003	In. 0	1:00 p. m.-----	Sec.-ft. 1.86	In. per hr. 0.0063	In. 0.1835
8:30 p. m.-----	.808	.0027	.0004	7:40 a. m.-----	.096	.0003	.0001	2:00 p. m.-----	1.72	.0058	.1896
8:40 p. m.-----	.808	.0027	.0009	8:00 a. m.-----	.112	.0003	.0002	3:00 p. m.-----	1.58	.0053	.1952
9:00 p. m.-----	.808	.0027	.0018	8:20 a. m.-----	.131	.0004	.0003	4:00 p. m.-----	1.39	.0047	.2002
9:20 p. m.-----	.852	.0029	.0027	8:40 a. m.-----	.141	.0005	.0005	5:00 p. m.-----	1.26	.0043	.2047
9:40 p. m.-----	.852	.0029	.0037	8:55 a. m.-----	.141	.0005	.0006	6:00 p. m.-----	1.20	.0041	.2089
10:00 p. m.-----	.896	.0030	.0047	9:00 a. m.-----	.164	.0006	.0006	7:00 p. m.-----	1.10	.0037	.2128
10:20 p. m.-----	.896	.0030	.0057	9:05 a. m.-----	.219	.0007	.0007	8:00 p. m.-----	.992	.0033	.2163
10:40 p. m.-----	.940	.0032	.0067	9:10 a. m.-----	.365	.0012	.0008	9:00 p. m.-----	.940	.0032	.2196
11:00 p. m.-----	.992	.0034	.0078	9:15 a. m.-----	.446	.0015	.0009	10:00 p. m.-----	.896	.0030	.2272
11:20 p. m.-----	1.10	.0037	.0090	9:20 a. m.-----	.390	.0013	.0010	11:00 p. m.-----	.808	.0027	.2256
11:40 p. m.-----	1.20	.0041	.0103	9:40 a. m.-----	.502	.0017	.0015	12:00 p. m.-----	.764	.0026	.2283
12:00 p. m.-----	1.32	.0045	.0117	10:00 a. m.-----	.474	.0016	.0020	June 20:			
Feb. 15:				10:20 a. m.-----	.502	.0017	.0025	2:00 a. m.-----	.682	.0023	.2332
12:20 a. m.-----	1.45	.0049	.0133	10:40 a. m.-----	.644	.0022	.0031	4:00 a. m.-----	.606	.0020	.2375
12:40 a. m.-----	1.72	.0058	.0151	11:00 a. m.-----	.682	.0023	.0038	6:00 a. m.-----	.568	.0019	.2415
12:50 a. m.-----	1.86	.0063	.0161	11:15 a. m.-----	.808	.0027	.0044	8:00 a. m.-----	.530	.0018	.2452
1:00 a. m.-----	2.02	.0068	.0172	11:20 a. m.-----	1.04	.0035	.0046	9:30 a. m.-----	.502	.0017	.2478
1:10 a. m.-----	2.02	.0068	.0183	11:30 a. m.-----	1.58	.0053	.0053	11:00 a. m.-----	.474	.0016	.2503
1:15 a. m.-----	2.02	.0068	.0189	11:40 a. m.-----	2.11	.0071	.0063	12:30 p. m.-----	.446	.0015	.2526
1:18 a. m.-----	2.63	.0089	.0193	11:50 a. m.-----	2.72	.0092	.0077	2:00 p. m.-----	.418	.0014	.2548
1:20 a. m.-----	2.83	.0096	.0196	12:00 m.-----	3.04	.0103	.0093	3:30 p. m.-----	.390	.0013	.2568
1:30 a. m.-----	3.36	.0114	.0213	12:20 p. m.-----	3.04	.0103	.0127	5:00 p. m.-----	.365	.0012	.2586
1:40 a. m.-----	4.23	.0143	.0234	12:40 p. m.-----	3.04	.0103	.0161	8:00 p. m.-----	.341	.0011	.2622
1:50 a. m.-----	4.65	.0157	.0259	1:00 p. m.-----	3.14	.0106	.0196	12:00 p. m.-----	.316	.0011	.2666
2:00 a. m.-----	5.40	.0183	.0287	1:20 p. m.-----	3.04	.0103	.0231	STORM OF JULY 8, TOTAL RAINFALL 1.02 INCHES			
2:02 a. m.-----	5.73	.0194	.0293	1:40 p. m.-----	2.72	.0092	.0263	July 8:			
2:05 a. m.-----	7.56	.0256	.0304	2:00 p. m.-----	2.45	.0083	.0302	5:05 a. m. ¹ -----			
2:06 a. m.-----	9.31	.0315	.0308	2:20 p. m.-----	1.94	.0065	.0327	6:00 a. m.-----			
2:10 a. m.-----	10.3	.0348	.0330	2:40 p. m.-----	1.45	.0049	.0346	7:00 a. m.-----	0.164	0.0006	0
2:20 a. m.-----	12.4	.0419	.0394	3:00 p. m.-----	1.15	.0039	.0361	7:40 a. m.-----			
2:30 a. m.-----	14.3	.0483	.0458	3:20 p. m.-----	.940	.0032	.0373	8:00 a. m.-----	.190	.0006	.0001
2:40 a. m.-----	15.6	.0527	.0542	3:40 p. m.-----	.808	.0027	.0383	8:10 a. m.-----	.204	.0007	.0003
2:45 a. m.-----	16.3	.0551	.0587	4:00 p. m.-----	.682	.0023	.0391	8:20 a. m.-----	.204	.0007	.0004
2:50 a. m.-----	15.6	.0527	.0632	4:20 p. m.-----	.606	.0020	.0398	8:30 a. m.-----	.204	.0007	.0005
3:00 a. m.-----	16.0	.0541	.0721	4:40 p. m.-----	.530	.0018	.0404	8:40 a. m.-----	.204	.0007	.0006
3:10 a. m.-----	14.6	.0493	.0807	5:00 p. m.-----	.502	.0017	.0410	8:50 a. m.-----	.204	.0007	.0007
3:20 a. m.-----	12.7	.0429	.0884	5:20 p. m.-----	.474	.0016	.0415	8:55 a. m.-----	.204	.0007	.0008
3:30 a. m.-----	11.1	.0375	.0951	5:40 p. m.-----	.446	.0015	.0420	9:00 a. m.-----	.204	.0007	.0009
3:40 a. m.-----	9.56	.0323	.1009	6:00 p. m.-----	.418	.0014	.0425	9:10 a. m.-----	.204	.0007	.0010
3:50 a. m.-----	8.62	.0291	.1060	6:20 p. m.-----	.418	.0014	.0430	9:20 a. m.-----	.190	.0006	.0011
4:00 a. m.-----	7.76	.0262	.1106	6:40 p. m.-----	.390	.0013	.0435	9:30 a. m.-----	.190	.0006	.0012
4:20 a. m.-----	6.60	.0223	.1187	6:50 p. m.-----	.390	.0013	.0437	9:40 a. m.-----	.190	.0006	.0013
4:40 a. m.-----	6.05	.0209	.1258	7:00 p. m.-----	.446	.0015	.0439	9:50 a. m.-----	.190	.0006	.0014
5:00 a. m.-----	6.05	.0209	.1326	7:20 p. m.-----	.606	.0020	.0445	10:00 a. m.-----	.177	.0006	.0015
5:20 a. m.-----	6.05	.0209	.1394	7:40 p. m.-----	.720	.0024	.0452	10:10 a. m.-----	.177	.0006	.0016
5:40 a. m.-----	6.05	.0209	.1462	8:00 p. m.-----	.808	.0027	.0461	10:20 a. m.-----	.177	.0006	.0017
6:00 a. m.-----	5.73	.0194	.1528	8:20 p. m.-----	.940	.0032	.0471	10:30 a. m.-----	.177	.0006	.0017
6:20 a. m.-----	5.56	.0188	.1592	8:40 p. m.-----	1.15	.0039	.0483	10:40 a. m.-----	.177	.0006	.0017
6:40 a. m.-----	5.09	.0172	.1652	9:00 p. m.-----	1.20	.0041	.0496	10:50 a. m.-----	.177	.0006	.0017
7:00 a. m.-----	4.65	.0157	.1707	9:20 p. m.-----	1.32	.0045	.0510	11:00 a. m.-----	.177	.0006	.0018
7:20 a. m.-----	4.36	.0147	.1758	9:40 p. m.-----	1.20	.0041	.0524	11:10 a. m.-----	.177	.0006	.0019
7:40 a. m.-----	4.09	.0138	.1806	10:00 p. m.-----	1.15	.0039	.0537	11:20 a. m.-----	.164	.0006	.0020
8:00 a. m.-----	3.96	.0134	.1851	10:20 p. m.-----	1.15	.0039	.0550	11:30 a. m.-----	.164	.0006	.0021
8:20 a. m.-----	3.82	.0129	.1895	10:40 p. m.-----	1.20	.0041	.0563	11:40 a. m.-----	.164	.0006	.0022
8:40 a. m.-----	3.71	.0125	.1937	11:00 p. m.-----	1.26	.0043	.0576	11:50 a. m.-----	.164	.0006	.0022
9:00 a. m.-----	3.59	.0121	.1978	11:20 p. m.-----	1.32	.0045	.0591	12:00 m.-----	.164	.0006	.0022
9:20 a. m.-----	3.48	.0118	.2018	11:40 p. m.-----	1.39	.0047	.0606	12:10 p. m.-----	.164	.0006	.0022
9:40 a. m.-----	3.48	.0118	.2057	12:00 p. m.-----	1.45	.0049	.0622	12:20 p. m.-----	.164	.0006	.0022
10:00 a. m.-----	3.36	.0113	.2096	June 19:				12:30 p. m.-----	.164	.0006	.0022
10:20 a. m.-----	3.25	.0110	.2133	12:20 a. m.-----	1.51	.0051	.0639	12:40 p. m.-----	.164	.0006	.0022
10:40 a. m.-----	3.25	.0110	.2170	12:40 a. m.-----	1.65	.0056	.0657	12:50 p. m.-----	.164	.0006	.0022
11:00 a. m.-----	3.14	.0106	.2206	1:00 a. m.-----	1.79	.0060	.0676	1:00 p. m.-----	.164	.0006	.0022
11:20 a. m.-----	3.14	.0106	.2241	1:20 a. m.-----	2.19	.0074	.0698	1:10 p. m.-----	.164	.0006	.0022
11:40 a. m.-----	3.04	.0103	.2276	1:40 a. m.-----	2.45	.0083	.0724	1:20 p. m.-----	.164	.0006	.0022
12:00 m.-----	2.93	.0099	.2310	2:00 a. m.-----	2.83	.0095	.0754	1:30 p. m.-----	.177	.0006	.0022
12:20 p. m.-----	2.93	.0099	.2343	2:20 a. m.-----	3.04	.0103	.0787	1:40 p. m.-----	.204	.0007	.0022
12:40 p. m.-----	2.93	.0096	.2376	2:40 a. m.-----	3.04	.0103	.0821	1:50 p. m.-----	.341	.0012	.0022
1:00 p. m.-----	2.83	.0096	.2408	3:00 a. m.-----	3.04	.0103	.0855	2:00 p. m.-----	.530	.0018	.0022
1:20 p. m.-----	2.83	.0096	.2440	3:20 a. m.-----	3.04	.0103	.0889	2:10 p. m.-----	.852	.0029	.0031
1:40 p. m.-----	2.72	.0092	.2471	3:40 a. m.-----	3.04	.0103	.0923	2:20 p. m.-----	1.26	.0042	.0034
2:00 p. m.-----	2.72	.0092	.2502	4:00 a. m.-----	3.14	.0106	.0958	2:30 p. m.-----	1.65	.0056	.0038
3:00 p. m.-----	2.63	.0089	.2592	4:20 a. m.-----	3.25	.0110	.0994	2:40 p. m.-----	2.45	.0083	.0050
4:00 p. m.-----	2.54	.0086	.2679	4:40 a. m.-----	3.36	.0113	.1031	2:50 p. m.-----	3.25	.0110	.0066
5:00 p. m.-----	2.45	.0083	.2763	5:00 a. m.-----	3.59	.0121	.1070	3:00 p. m.-----	3.36	.0114	.0085
7:00 p. m.-----	2.27	.0077	.2923	5:20 a. m.-----	3.71	.0125	.1111	3:10 p. m.-----	3.48	.0118	.0104
9:00 p. m.-----	2.11	.0071	.3071	5:40 a. m.-----	3.71	.0125	.1153	3:20 p. m.-----	3.59	.0121	.0114
11:00 p. m.-----	2.02	.0068	.3211	6:00 a. m.-----	3.71	.0125	.1195	3:30 p. m.-----	3.48	.0118	.0124
12:00 p. m.-----	1.94	.0066	.3278	6:20 a. m.-----	3.59	.0121	.1236	3:40 p. m.-----	3.25	.0110	.0143
Feb. 16:				6:40 a. m.-----	3.48	.0117	.1276	4:00 p. m.-----	.896	.0030	.0251
2:00 a. m.-----	1.86	.0063	.3406	7:00 a. m.-----	3.36	.0113	.1315	4:10 p. m.-----	.808	.0027	.0266
4:00 a. m.-----	1.72	.0058	.3527	7:20 a. m.-----	3.25	.0110	.1352				
6:00 a. m.-----	1.58	.0053	.3639	7:40 a. m.-----	3.14	.0106	.1388				
7:00 a. m.-----	1.51	.0051	.3691	8:00 a. m.-----	3.14	.0106	.1423				
9:00 a. m.-----	1.51	.0051	.3793	8:20 a. m.-----	3.04	.0103	.1458				
12:00 m.-----	1.72	.0058	.3957	8:40 a. m.-----	2.93	.0099	.1492				
1:00 p. m.-----	1.72	.0058	.4015	8:50 a. m.-----	2.83	.0095	.1508				
2:00 p. m.-----	1.58	.0053	.4071	9:00 a. m.-----	2.83	.0095	.1524				
5:00 p. m.-----	1.51	.0051	.4228	10:00 a. m.-----	2.54	.0086	.1615				
9:00 p. m.-----	1.45	.0049	.4428	11:00 a. m.-----	2.27	.0077	.1696				
12:00 p. m.-----	1.45	.0049	.4575	12:00 m.-----	2.02	.0068	.1769				

¹ Observed flow without corrections for base flow.² Rain began.³ Rain ended.

TABLE 61.—Run-off from watershed 91 for selected storms, 1939—Continued

Date and time	Discharge	Accumulated run-off	Date and time	Discharge	Accumulated run-off	Date and time	Discharge	Accumulated run-off
STORM OF JULY 8, TOTAL RAINFALL 1.02 INCHES—Continued			STORM OF OCTOBER 25-27, TOTAL RAINFALL 3.50 INCHES—Continued			STORM OF OCTOBER 25-27, TOTAL RAINFALL 3.50 INCHES—Continued		
July 8—Con.	Sec.-ft.	In. per hr.	Oct. 25—Con.	Sec.-ft.	In. per hr.	Oct. 26—Con.	Sec.-ft.	In. per hr.
4:20 p. m.	0.764	0.0026	4:40 p. m.	0.446	0.0015	9:00 a. m.	1.79	0.0060
4:30 p. m.	.720	.0024	4:45 p. m.	.502	.0017	9:05 a. m.	1.65	.0056
4:40 p. m.	.682	.0023	5:00 p. m.	.502	.0017	9:10 a. m.	1.94	.0066
4:50 p. m.	.682	.0023	5:20 p. m.	.606	.0020	9:20 a. m.	1.51	.0051
5:00 p. m.	.644	.0022	5:25 p. m.	.644	.0022	9:24 a. m.	1.94	.0066
6:00 p. m.	.502	.0017	5:30 p. m.	.852	.0029	9:30 a. m.	1.72	.0058
7:00 p. m.	.446	.0015	5:38 p. m.	.940	.0032	9:40 a. m.	1.26	.0043
8:00 p. m.	.390	.0013	5:40 p. m.	.940	.0032	9:50 a. m.	.992	.0034
9:00 p. m.	.365	.0012	6:00 p. m.	.764	.0026	10:00 a. m.	.764	.0026
10:00 p. m.	.365	.0012	6:20 p. m.	.808	.0027	10:30 a. m.	.530	.0018
11:00 p. m.	.341	.0012	6:25 p. m.	.808	.0027	10:40 a. m.	.418	.0014
12:00 p. m.	.316	.0011	6:40 p. m.	.720	.0024	10:52 a. m.	.530	.0018
July 9:			7:00 p. m.	.606	.0020	11:00 a. m.	.502	.0017
3:00 a. m.	.292	.0010	7:15 p. m.	.568	.0019	11:20 a. m.	.390	.0013
6:00 a. m.	.267	.0009	7:20 p. m.	.606	.0020	11:40 a. m.	.316	.0011
9:00 a. m.	.251	.0008	7:26 p. m.	.682	.0023	12:00 m.	.251	.0008
12:00 m.	.235	.0008	7:40 p. m.	.606	.0020	12:20 p. m.	.219	.0007
3:00 p. m.	.219	.0007	8:00 p. m.	.530	.0018	12:30 p. m.	.204	.0007
6:00 p. m.	.204	.0007	8:20 p. m.	.474	.0016	12:40 p. m.	.204	.0007
7:00 p. m.	.204	.0007	8:40 p. m.	.418	.0014	12:50 p. m.	.219	.0007
12:00 p. m.	.219	.0007	9:00 p. m.	.341	.0012	1:00 p. m.	.219	.0007
STORM OF OCTOBER 25-27, TOTAL RAINFALL 3.50 INCHES			9:20 p. m.	.292	.0010	1:20 p. m.	.190	.0006
Oct. 25:			9:40 p. m.	.267	.0009	1:40 p. m. ³	.177	.0006
12:17 a. m. ²			10:00 p. m.	.235	.0008	2:00 p. m.	.164	.0006
12:20 a. m.			10:20 p. m.	.219	.0007	3:00 p. m.	.131	.0004
12:24 a. m.	0.011	T	10:30 p. m.	.219	.0007	4:00 p. m.	.112	.0004
12:30 a. m.	.013	T	10:34 p. m.	.292	.0010	5:00 p. m.	.096	.0003
12:35 a. m.	.017	0.0001	10:36 p. m.	.418	.0014	6:30 p. m.	.083	.0003
12:40 a. m.	.022	.0001	10:37 p. m.	.530	.0018	8:00 p. m.	.071	.0002
12:45 a. m.	.025	.0001	10:38 p. m.	.720	.0024	9:00 p. m.	.066	.0002
12:50 a. m.	.028	.0001	10:39 p. m.	.940	.0032	10:30 p. m.	.061	.0002
1:00 a. m.	.028	.0001	10:40 p. m.	1.26	.0043	12:00 p. m.	.056	.0002
1:10 a. m.	.028	.0001	10:44 p. m.	1.58	.0053	Oct. 27:		
1:20 a. m.	.028	.0001	11:00 p. m.	1.20	.0041	12:30 a. m.	.056	.0002
1:40 a. m.	.025	.0001	11:10 p. m.	1.26	.0043	2:30 a. m.	.052	.0002
2:00 a. m.	.022	.0001	11:12 p. m.	1.72	.0058	3:50 a. m. ²	.052	.0002
2:20 a. m.	.022	.0001	11:16 p. m.	2.11	.0071	4:00 a. m.	.052	.0002
2:40 a. m.	.022	.0001	11:20 p. m.	2.02	.0068	4:10 a. m.	.056	.0002
3:00 a. m.	.022	.0001	11:30 p. m.	1.65	.0056	4:20 a. m.	.066	.0002
3:20 a. m.	.019	.0001	11:40 p. m.	1.39	.0047	4:25 a. m.	.071	.0002
3:40 a. m.	.019	.0001	11:45 p. m.	1.20	.0041	4:30 a. m.	.083	.0003
4:00 a. m.	.019	.0011	11:56 p. m.	.992	.0034	4:40 a. m.	.096	.0003
4:20 a. m.	.017	.0001	12:00 p. m.	1.26	.0043	4:45 a. m.	.121	.0004
4:40 a. m.	.017	.0001	Oct. 26:			4:48 a. m.	.164	.0006
5:00 a. m.	.019	.0001	12:03 a. m.	1.32	.0045	4:50 a. m.	.219	.0007
5:20 a. m.	.022	.0001	12:20 a. m.	1.04	.0035	4:52 a. m.	.292	.0010
5:40 a. m.	.022	.0001	12:30 a. m.	.896	.0030	4:55 a. m.	.418	.0014
6:00 a. m.	.025	.0001	12:38 a. m.	1.32	.0045	4:58 a. m.	.530	.0018
6:20 a. m.	.022	.0001	12:40 a. m.	1.26	.0043	5:00 a. m.	.720	.0024
6:40 a. m.	.022	.0001	1:00 a. m.	.992	.0034	5:05 a. m.	.992	.0034
7:00 a. m.	.025	.0001	1:20 a. m.	.764	.0026	5:10 a. m.	1.26	.0043
7:20 a. m.	.031	.0001	1:35 a. m.	.764	.0026	5:13 a. m.	1.58	.0053
7:40 a. m.	.039	.0001	1:40 a. m.	.682	.0023	5:20 a. m.	1.94	.0066
8:00 a. m.	.039	.0001	2:00 a. m.	.568	.0019	5:24 a. m.	1.86	.0063
8:20 a. m.	.035	.0001	2:20 a. m.	.474	.0016	5:30 a. m.	2.27	.0077
8:40 a. m.	.039	.0001	2:35 a. m.	.568	.0019	5:32 a. m.	2.93	.0099
9:00 a. m.	.039	.0001	2:40 a. m.	.568	.0019	5:35 a. m.	3.59	.0122
9:20 a. m.	.039	.0001	3:00 a. m.	.418	.0014	5:40 a. m.	3.25	.0110
9:35 a. m.	.043	.0001	3:20 a. m.	.316	.0011	5:50 a. m.	2.54	.0086
9:40 a. m.	.047	.0002	3:40 a. m.	.251	.0008	6:00 a. m.	2.02	.0068
9:50 a. m.	.061	.0002	4:00 a. m.	.235	.0008	6:02 a. m.	2.45	.0083
10:00 a. m.	.077	.0003	4:20 a. m.	.219	.0007	6:05 a. m.	2.83	.0096
10:20 a. m.	.077	.0003	4:40 a. m.	.204	.0007	6:20 a. m.	2.11	.0071
10:40 a. m.	.071	.0002	5:00 a. m.	.177	.0006	6:40 a. m.	1.51	.0051
11:00 a. m.	.071	.0002	5:20 a. m.	.164	.0006	6:44 a. m.	1.45	.0049
11:20 a. m.	.066	.0002	5:30 a. m.	.164	.0006	6:54 a. m.	1.58	.0053
11:40 a. m.	.061	.0002	5:40 a. m.	.164	.0006	7:00 a. m.	1.51	.0051
12:00 m.	.056	.0002	5:50 a. m.	.177	.0006	7:20 a. m.	1.20	.0041
12:20 p. m.	.056	.0002	6:00 a. m.	.164	.0006	7:40 a. m.	.940	.0032
12:40 p. m.	.056	.0002	6:20 a. m.	.152	.0005	8:00 a. m.	.764	.0026
1:00 p. m.	.056	.0002	6:40 a. m.	.141	.0005	8:12 a. m.	.720	.0024
1:20 p. m.	.061	.0002	7:00 a. m.	.131	.0004	8:20 a. m.	.808	.0027
1:40 p. m.	.061	.0002	7:20 a. m.	.121	.0004	8:40 a. m.	.940	.0032
2:00 p. m.	.061	.0002	7:35 a. m.	.121	.0004	9:00 a. m.	.940	.0032
2:20 p. m.	.077	.0003	7:40 a. m.	.104	.0004	9:12 a. m.	1.10	.0037
2:35 p. m.	.089	.0003	8:00 a. m.	.104	.0004	9:20 a. m.	.992	.0034
2:40 p. m.	.104	.0004	8:20 a. m.	.104	.0004	9:30 a. m.	.992	.0034
2:45 p. m.	.121	.0004	8:30 a. m.	.096	.0003	9:40 a. m.	1.20	.0041
2:55 p. m.	.164	.0006	8:32 a. m.	.121	.0004	9:51 a. m.	1.32	.0045
3:00 p. m.	.164	.0006	8:33 a. m.	.152	.0005	10:00 a. m.	1.26	.0043
3:20 p. m.	.152	.0005	8:34 a. m.	.204	.0007	10:10 a. m.	1.32	.0045
3:40 p. m.	.141	.0005	8:35 a. m.	.267	.0009	10:14 a. m.	1.72	.0058
4:00 p. m.	.141	.0005	8:36 a. m.	.365	.0012	10:18 a. m.	1.94	.0066
4:10 p. m.	.164	.0006	8:37 a. m.	.474	.0016	10:20 a. m.	1.86	.0063
4:15 p. m.	.190	.0006	8:38 a. m.	.682	.0023	10:40 a. m.	1.39	.0047
4:20 p. m.	.235	.0008	8:39 a. m.	.940	.0032	10:44 a. m.	1.32	.0045
4:30 p. m.	.316	.0011	8:40 a. m.	1.26	.0043	10:53 a. m.	1.72	.0058
			8:42 a. m.	1.65	.0056	11:00 a. m.	1.65	.0056
			8:45 a. m.	1.86	.0063	11:20 a. m.	1.26	.0043
			8:52 a. m.	1.79	.0060	11:40 a. m.	1.04	.0035
			8:55 a. m.	2.02	.0068	12:00 m.	.940	.0032

² Rain began.³ Rain ended.

TABLE 61.—Run-off from watershed 91 for selected storms, 1939—Continued

Date and time		Discharge		Accumulated run-off	Date and time		Discharge		Accumulated run-off	Date and time		Discharge		Accumulated run-off	
STORM OF OCTOBER 25-27, TOTAL RAIN-FALL 3.50 INCHES—Continued					STORM OF OCTOBER 25-27, TOTAL RAIN-FALL 3.50 INCHES—Continued					STORM OF OCTOBER 25-27, TOTAL RAIN-FALL 3.50 INCHES—Continued					
Oct. 27—Con.	Sec.-ft.	In. per hr.	In.	Oct. 27—Con.	Sec.-ft.	In. per hr.	In.	Oct. 27—Con.	Sec.-ft.	In. per hr.	In.	Oct. 27—Con.	Sec.-ft.	In. per hr.	In.
12:20 p. m.-----	0.808	0.0027	0.0802	3:35 p. m.-----	0.502	0.0017	0.0870	8:00 p. m. ³ -----	0.235	0.0008	0.0925	8:00 p. m. ³ -----	0.235	0.0008	0.0925
12:40 p. m.-----	.644	.0022	.0810	3:40 p. m.-----	.530	.0018	.0872	9:30 p. m.-----	.204	.0007	.0936	9:30 p. m.-----	.204	.0007	.0936
1:00 p. m.-----	.530	.0018	.0817	3:50 p. m.-----	.568	.0019	.0875	11:00 p. m.-----	.177	.0006	.0946	11:00 p. m.-----	.177	.0006	.0946
1:20 p. m.-----	.474	.0016	.0823	4:00 p. m.-----	.568	.0019	.0878	12:00 p. m.-----	.152	.0005	.0952	12:00 p. m.-----	.152	.0005	.0952
1:32 p. m.-----	.446	.0015	.0826	4:20 p. m.-----	.502	.0017	.0884	Oct. 28:				Oct. 28:			
1:40 p. m.-----	.568	.0019	.0828	4:40 p. m.-----	.446	.0015	.0889	2:00 a. m.-----	.131	.0004	.0962	2:00 a. m.-----	.131	.0004	.0962
1:45 p. m.-----	.606	.0020	.0830	4:50 p. m.-----	.418	.0014	.0891	4:20 a. m.-----	.112	.0004	.0972	4:20 a. m.-----	.112	.0004	.0972
2:00 p. m.-----	.644	.0022	.0835	5:00 p. m.-----	.418	.0014	.0893	6:30 a. m.-----	.096	.0003	.0980	6:30 a. m.-----	.096	.0003	.0980
2:20 p. m.-----	.568	.0019	.0842	5:20 p. m.-----	.418	.0014	.0898	8:00 a. m.-----	.089	.0003	.0985	8:00 a. m.-----	.089	.0003	.0985
2:23 p. m.-----	.606	.0020	.0843	5:40 p. m.-----	.365	.0012	.0902	10:00 a. m.-----	.077	.0003	.0991	10:00 a. m.-----	.077	.0003	.0991
2:26 p. m.-----	.852	.0029	.0844	6:00 p. m.-----	.365	.0012	.0906	11:30 a. m.-----	.071	.0002	.0995	11:30 a. m.-----	.071	.0002	.0995
2:30 p. m.-----	1.04	.0035	.0846	6:20 p. m.-----	.316	.0011	.0910	1:00 p. m.-----	.066	.0002	.0998	1:00 p. m.-----	.066	.0002	.0998
2:40 p. m.-----	.896	.0030	.0851	6:40 p. m.-----	.292	.0010	.0913	4:00 p. m.-----	.061	.0002	.1004	4:00 p. m.-----	.061	.0002	.1004
3:00 p. m.-----	.606	.0020	.0859	7:00 p. m.-----	.267	.0009	.0916	6:30 p. m.-----	.056	.0002	.1009	6:30 p. m.-----	.056	.0002	.1009
3:15 p. m.-----	.530	.0018	.0864	7:20 p. m.-----	.267	.0009	.0919	8:00 p. m.-----	.056	.0002	.1012	8:00 p. m.-----	.056	.0002	.1012
3:20 p. m.-----	.530	.0018	.0866	7:40 p. m.-----	.251	.0008	.0922	12:00 p. m.-----	.052	.0002	.1019	12:00 p. m.-----	.052	.0002	.1019

³ Rain ended.

TABLE 62.—Run-off from watershed 92 for selected storms, 1939

[Area 920 acres; rainfall measured at recording rain gages 1, 7, 8]

Date and time		Discharge ¹		Accumulated run-off		Date and time		Discharge ¹		Accumulated run-off							
STORM OF FEB. 14-15, TOTAL RAINFALL 1.40 INCHES						STORM OF FEB. 14-15, TOTAL RAIN FALL 1.40 INCHES—Continued						STORM OF JUNE 18-19, TOTAL RAINFALL 3.13 INCHES—Continued					
Feb. 14:		Sec.-ft.	In. per hr.	In.		Feb. 15—Con.		Sec.-ft.	In. per hr.	In.		June 18—Con.		Sec.-ft.	In. per hr.	In.	
8:20 p. m.-----		2.04	0.0022	0		1:00 p. m.-----		9.98	0.0108	0.2921		2:40 p. m.-----		7.21	0.0078	0.0317	
8:40 p. m.-----		2.04	.0022	.0007		1:20 p. m.-----		9.98	.0108	.2957		3:00 p. m.-----		5.96	.0064	.0341	
9:00 p. m.-----		2.04	.0022	.0014		1:40 p. m.-----		9.69	.0104	.2992		3:20 p. m.-----		4.86	.0052	.0360	
9:20 p. m.-----		2.12	.0023	.0021		2:00 p. m.-----		9.69	.0104	.3027		3:40 p. m.-----		3.83	.0041	.0376	
9:40 p. m.-----		2.12	.0023	.0029		4:00 p. m.-----		8.60	.0093	.3225		4:00 p. m.-----		3.16	.0034	.0389	
10:00 p. m.-----		2.20	.0024	.0037		6:00 p. m.-----		7.90	.0085	.3403		4:20 p. m.-----		2.74	.0030	.0400	
10:20 p. m.-----		2.31	.0025	.0045		10:00 p. m.-----		6.51	.0070	.3714		4:40 p. m.-----		2.41	.0026	.0409	
10:40 p. m.-----		2.41	.0026	.0053		12:00 p. m.-----		5.96	.0064	.3849		5:00 p. m.-----		2.12	.0023	.0419	
11:00 p. m.-----		2.52	.0027	.0062		Feb. 16:						5:20 p. m.-----		1.95	.0021	.0426	
11:20 p. m.-----		2.63	.0028	.0071		3:00 a. m.-----		5.41	.0058	.4033		5:40 p. m.-----		1.79	.0019	.0433	
11:40 p. m.-----		2.84	.0031	.0081		6:00 a. m.-----		4.54	.0049	.4194		6:00 p. m.-----		1.63	.0018	.0439	
12:00 p. m.-----		3.16	.0034	.0092		9:00 a. m.-----		4.26	.0039	.4337		6:20 p. m.-----		1.56	.0017	.0444	
Feb. 15:						10:00 a. m.-----		4.54	.0049	.4385		6:40 p. m.-----		1.48	.0016	.0449	
12:20 a. m.-----		3.27	.0035	.0104		11:00 a. m.-----		5.05	.0054	.4437		7:00 p. m.-----		1.40	.0015	.0454	
12:40 a. m.-----		3.69	.0040	.0117		7:00 p. m.-----		4.26	.0046	.4839		7:20 p. m.-----		1.48	.0016	.0459	
1:00 a. m.-----		4.40	.0047	.0132		12:00 p. m.-----		3.83	.0041	.5057		7:40 p. m.-----		1.63	.0018	.0464	
1:20 a. m.-----		5.60	.0060	.0150		STORM OF JUNE 18-19, TOTAL RAINFALL 3.13 INCHES						8:00 p. m.-----		1.87	.0020	.0470	
1:40 a. m.-----		7.90	.0085	.0174								8:20 p. m.-----		2.04	.0022	.0477	
1:50 a. m.-----		9.98	.0108	.0190								8:40 p. m.-----		2.20	.0024	.0485	
2:00 a. m.-----		14.2	.0153	.0212								9:00 p. m.-----		2.41	.0026	.0493	
2:10 a. m.-----		19.7	.0213	.0243								9:20 p. m.-----		2.63	.0028	.0502	
2:20 a. m.-----		28.7	.0310	.0286								9:40 p. m.-----		2.84	.0031	.0512	
2:30 a. m.-----		38.4	.0414	.0346		June 18:						10:00 p. m.-----		2.95	.0032	.0522	
2:40 a. m.-----		46.8	.0505	.0423		7:30 a. m.-----						10:20 p. m.-----		3.06	.0033	.0533	
2:50 a. m.-----		57.5	.0620	.0517		7:40 a. m.-----						10:40 p. m.-----		3.16	.0034	.0544	
3:00 a. m.-----		67.4	.0727	.0629		8:00 a. m.-----						11:00 p. m.-----		3.27	.0035	.0556	
3:10 a. m.-----		72.3	.0780	.0755		8:20 a. m.-----						11:20 p. m.-----		3.55	.0038	.0568	
3:20 a. m.-----		71.1	.0767	.0884		8:40 a. m.-----						11:40 p. m.-----		3.83	.0041	.0581	
3:30 a. m.-----		74.8	.0807	.1015		8:50 a. m.-----						12:00 p. m.-----		4.26	.0046	.0596	
3:40 a. m.-----		54.5	.0588	.1131		9:00 a. m.-----						June 19:					
4:00 a. m.-----		40.9	.0441	.1303		9:10 a. m.-----						12:20 a. m.-----		4.54		.0049	
4:20 a. m.-----		33.4	.0365	.1437		9:20 a. m.-----						12:40 a. m.-----		5.23		.0056	
4:40 a. m.-----		28.1	.0303	.1548		9:30 a. m.-----						12:50 a. m.-----		5.41		.0058	
5:00 a. m.-----		25.0	.0270	.1644		9:40 a. m.-----						12:55 a. m.-----		5.78		.0062	
5:20 a. m.-----		22.9	.0247	.1730		9:50 a. m.-----						1:00 a. m.-----		8.13		.0087	
5:40 a. m.-----		21.8	.0235	.1810		10:00 a. m.-----						1:02 a. m.-----		10.6		.0114	
6:00 a. m.-----		20.8	.0224	.1887		10:10 a. m.-----						1:05 a. m.-----		13.9		.0150	
6:20 a. m.-----		19.7	.0213	.1960		10:20 a. m.-----						1:10 a. m.-----		17.9		.0193	
6:40 a. m.-----		18.4	.0198	.2029		10:40 a. m.-----						1:20 a. m.-----		23.4		.0254	
7:00 a. m.-----		17.5	.0189	.2094		11:00 a. m.-----						1:30 a. m.-----		25.0		.0269	
7:20 a. m.-----		16.6	.0179	.2155		11:20 a. m.-----						1:40 a. m.-----		24.5		.0264	
7:40 a. m.-----		15.7	.0169	.2213		11:30 a. m.-----						2:00 a. m.-----		21.3		.0229	
8:00 a. m.-----		14.9	.0161	.2268		11:40 a. m.-----						2:20 a. m.-----		19.7		.0212	
8:20 a. m.-----		14.6	.0157	.2321		11:50 a. m.-----						2:40 a. m.-----		16.2		.0174	
8:40 a. m.-----		13.9	.0150	.2372		11:55 a. m.-----						3:00 a. m.-----		12.8		.0138	
9:00 a. m.-----		13.5	.0146	.2421		12:00 m.-----						3:20 a. m.-----		11.1		.0119	
9:20 a. m.-----		13.1	.0141	.2469		12:10 p. m.-----						3:30 a. m.-----		10.8		.0116	
9:40 a. m.-----		12.8	.0138	.2516		12:20 p. m.-----						3:40 a. m.-----		11.1		.0119	
10:00 a. m.-----		12.4	.0134	.2561		12:30 p. m.-----						4:00 a. m.-----		13.5		.0145	
10:20 a. m.-----		12.1	.0130	.2605		12:40 p. m.-----						4:20 a. m.-----		16.6		.0179	
10:40 a. m.-----		11.7	.0126	.2648		1:00 p. m.-----						4:40 a. m.-----		17.5		.0188	
11:00 a. m.-----		11.4	.0123	.2690		1:10 p. m.-----						5:00 a. m.-----		17.1		.0184	
11:20 a. m.-----		11.1	.0120	.2731		1:20 p. m.-----						5:20 a. m.-----		17.1		.0184	
11:40 a. m.-----		10.8	.0116	.2770		1:30 p. m.-----						5:40 a. m.-----		14.9		.0160	
12:00 m.-----		10.6	.0114	.2809		1:40 p. m.-----						6:00 a. m.-----		13.1		.0141	
12:20 p. m.-----		10.3	.0111	.2847		2:00 p. m.-----						6:20 a. m.-----		11.4		.0123	
12:40 p. m.-----		10.3	.0111	.2884		2:20 p. m.-----						6:40 a. m.-----		10.8		.0116	

¹ Observed flow without corrections for base flow.

TABLE 62.—Run-off from watershed 92 for selected storms, 1939—Continued

Date and time	Discharge	Accumulated run-off	Date and time	Discharge	Accumulated run-off	Date and time	Discharge	Accumulated run-off
STORM OF JUNE 18-19, TOTAL RAINFALL 3.13 INCHES—Continued			STORM OF JULY 8, TOTAL RAINFALL 1.04 INCHES—Continued			STORM OF OCT. 25-27, TOTAL RAINFALL 3.40 INCHES—Continued		
June 19—Con.	Sec.-ft.	In. per hr.	July 8—Con.	Sec.-ft.	In. per hr.	Oct. 25—Con.	Sec.-ft.	In. per hr.
7:00 a. m.	10.6	0.0114	11:50 a. m.	0.448	0.0005	10:20 a. m.	0.083	0.0001
7:20 a. m.	10.3	0.0111	12:00 m.	.448	.0005	10:40 a. m.	.083	.0001
7:40 a. m.	9.98	.0108	12:10 p. m.	.448	.0005	11:00 a. m.	.083	.0001
8:00 a. m.	9.69	.0104	12:20 p. m.	.422	.0004	11:20 a. m.	.089	.0001
8:20 a. m.	9.40	.0101	12:30 p. m.	.422	.0004	11:40 a. m.	.096	.0001
8:40 a. m.	8.83	.0095	12:40 p. m.	.422	.0004	12:00 m.	.096	.0001
8:50 a. m.	8.83	.0095	12:45 p. m.	.448	.0005	12:20 p. m.	.104	.0001
9:00 a. m.	8.60	.0093	12:50 p. m.	.628	.0007	12:40 p. m.	.104	.0001
9:30 a. m.	8.13	.0087	12:52 p. m.	.850	.0009	1:00 p. m.	.112	.0001
10:00 a. m.	7.67	.0083	12:55 p. m.	1.21	.0013	1:20 p. m.	.112	.0001
11:00 a. m.	6.74	.0073	1:00 p. m.	1.87	.0020	1:40 p. m.	.121	.0001
12:00 m.	6.14	.0066	1:05 p. m.	2.63	.0028	2:00 p. m.	.121	.0001
1:00 p. m.	5.41	.0058	1:10 p. m.	3.27	.0035	2:20 p. m.	.131	.0001
2:00 p. m.	4.68	.0050	1:12 p. m.	5.05	.0054	2:40 p. m.	.152	.0002
3:00 p. m.	3.98	.0043	1:14 p. m.	7.67	.0083	3:00 p. m.	.177	.0002
4:00 p. m.	3.41	.0037	1:16 p. m.	11.4	.0123	3:20 p. m.	.204	.0002
5:00 p. m.	3.06	.0033	1:18 p. m.	16.6	.0179	3:40 p. m.	.219	.0002
6:00 p. m.	2.74	.0030	1:20 p. m.	23.4	.0253	4:00 p. m.	.235	.0002
7:00 p. m.	2.52	.0027	1:25 p. m.	22.9	.0247	4:20 p. m.	.308	.0003
8:00 p. m.	2.31	.0025	1:30 p. m.	21.3	.0230	4:40 p. m.	.422	.0004
9:00 p. m.	2.12	.0023	1:40 p. m.	16.6	.0123	5:00 p. m.	.532	.0006
11:00 p. m.	1.87	.0020	1:45 p. m.	17.1	.0185	5:20 p. m.	.660	.0007
12:00 p. m.	1.79	.0019	1:50 p. m.	16.2	.0175	5:30 p. m.	.850	.0009
June 20:			1:55 p. m.	14.6	.0158	5:35 p. m.	.994	.0011
1:00 a. m.	1.63	.0018	2:00 p. m.	14.2	.0153	5:40 p. m.	.994	.0011
2:30 a. m.	1.56	.0017	2:10 p. m.	12.4	.0134	6:00 p. m.	1.21	.0013
4:00 a. m.	1.48	.0016	2:20 p. m. ³	10.8	.0117	6:10 p. m.	1.34	.0014
5:00 a. m.	1.40	.0015	2:30 p. m.	9.98	.0108	6:20 p. m.	1.56	.0017
7:00 a. m.	1.34	.0014	2:40 p. m.	9.98	.0108	6:30 p. m.	1.63	.0018
9:00 a. m.	1.28	.0014	2:50 p. m.	9.12	.0098	6:40 p. m.	1.66	.0017
11:00 a. m.	1.21	.0013	3:00 p. m.	8.13	.0088	7:00 p. m.	1.48	.0016
1:00 p. m.	1.09	.0012	3:20 p. m.	6.33	.0068	7:20 p. m.	1.48	.0016
2:30 p. m.	1.04	.0011	3:40 p. m.	5.23	.0056	7:40 p. m.	1.40	.0015
4:00 p. m.	.994	.0011	4:00 p. m.	4.12	.0044	8:00 p. m.	1.28	.0014
6:00 p. m.	.898	.0010	4:20 p. m.	3.41	.0037	8:20 p. m.	1.21	.0013
8:00 p. m.	.812	.0009	4:27 p. m.	3.27	.0035	8:40 p. m.	1.15	.0012
10:00 p. m.	.774	.0008	4:40 p. m.	3.06	.0033	9:00 p. m.	1.04	.0011
12:00 p. m.	.774	.0008	5:00 p. m.	2.84	.0031	9:20 p. m.	.946	.0010
			6:00 p. m.	2.20	.0024	9:40 p. m.	.898	.0010
			7:00 p. m.	1.87	.0020	10:00 p. m.	.812	.0009
			8:00 p. m.	1.63	.0018	10:20 p. m.	.736	.0008
			9:00 p. m.	1.48	.0016	10:30 p. m.	.736	.0008
			10:00 p. m.	1.40	.0015	10:40 p. m.	.812	.0009
			11:00 p. m.	1.28	.0014	10:45 p. m.	.946	.0010
			12:00 p. m.	1.21	.0013	11:00 p. m.	1.09	.0012
			July 9:			11:10 p. m.	1.48	.0016
			3:00 a. m.	1.04	.0011	11:15 p. m.	1.87	.0020
			6:00 a. m.	.946	.0010	11:20 p. m.	2.31	.0025
			9:00 a. m.	.898	.0010	11:25 p. m.	2.41	.0026
			12:00 m.	.774	.0008	11:38 p. m.	2.20	.0024
			3:00 p. m.	.660	.0007	11:40 p. m.	2.52	.0027
			6:00 p. m.	.596	.0006	11:45 p. m.	3.27	.0035
			7:00 p. m.	.564	.0006	11:55 p. m.	3.55	.0038
			8:00 p. m.	.564	.0006	12:00 p. m.	3.41	.0037
						Oct. 26:		
						12:10 a. m.	3.16	.0034
						12:20 a. m.	2.74	.0030
						12:35 a. m.	2.31	.0025
						12:40 a. m.	2.41	.0026
						12:50 a. m.	2.63	.0028
						1:00 a. m.	2.52	.0027
						1:10 a. m.	2.31	.0025
						1:20 a. m.	2.41	.0026
						1:40 a. m.	2.20	.0024
						2:00 a. m.	1.95	.0021
						2:20 a. m.	2.20	.0024
						2:40 a. m.	2.12	.0023
						3:00 a. m.	1.87	.0020
						3:10 a. m.	1.79	.0019
						3:20 a. m.	1.79	.0019
						3:40 a. m.	1.63	.0018
						4:00 a. m.	1.48	.0016
						4:20 a. m.	1.28	.0014
						4:40 a. m.	1.15	.0012
						5:00 a. m.	1.09	.0011
						5:20 a. m.	1.04	.0011
						5:40 a. m.	.946	.0010
						6:00 a. m.	.898	.0010
						6:20 a. m.	.812	.0009
						6:40 a. m.	.774	.0008
						7:00 a. m.	.774	.0008
						7:20 a. m.	.774	.0008
						7:40 a. m.	.736	.0008
						8:00 a. m.	.698	.0008
						8:20 a. m.	.660	.0007
						8:34 a. m.	.660	.0007
						8:40 a. m.	.850	.0009
						8:41 a. m.	1.15	.0012
						8:43 a. m.	1.56	.0017
						8:45 a. m.	2.12	.0023
						8:50 a. m.	2.74	.0030
						8:58 a. m.	2.20	.0024

² Rain began.³ Rain ended.

TABLE 62.—Run-off from watershed 92 for selected storms, 1939—Continued

STORM OF OCT. 25-27, TOTAL RAINFALL 3.40 INCHES—Continued				STORM OF OCT. 25-27, TOTAL RAINFALL 3.40 INCHES—Continued				STORM OF OCT. 25-27, TOTAL RAINFALL 3.40 INCHES—Continued			
Date and time	Discharge	Accumulated run-off		Date and time	Discharge	Accumulated run-off		Date and time	Discharge	Accumulated run-off	
Oct. 26—Con.	Sec.-ft.	In. per hr.	In.	Oct. 27—Con.	Sec.-ft.	In. per hr.	In.	Oct. 27—Con.	Sec.-ft.	In. per hr.	In.
9:00 a. m.	2.31	0.0025	0.0251	5:30 a. m.	0.812	0.0009	.0412	3:20 p. m.	2.41	0.0026	0.0731
9:05 a. m.	2.74	.0030	.0253	5:35 a. m.	.946	.0010	.0413	3:25 p. m.	2.41	.0026	.0733
9:10 a. m.	2.95	.0032	.0256	5:38 a. m.	1.09	.0012	.0414	3:40 p. m.	2.20	.0024	.0739
9:15 a. m.	3.69	.0040	.0259	5:40 a. m.	1.34	.0014	.0414	4:00 p. m.	2.04	.0022	.0747
9:20 a. m.	4.54	.0049	.0263	5:42 a. m.	1.79	.0019	.0415	4:20 p. m.	1.95	.0021	.0754
9:24 a. m.	4.68	.0050	.0266	5:45 a. m.	2.41	.0026	.0416	4:40 p. m.	1.87	.0020	.0761
9:30 a. m.	6.33	.0068	.0272	5:50 a. m.	3.06	.0033	.0418	5:00 p. m.	1.79	.0019	.0768
9:40 a. m.	5.60	.0060	.0283	5:55 a. m.	3.16	.0034	.0421	5:20 p. m.	1.63	.0018	.0774
9:50 a. m.	4.40	.0047	.0292	6:00 a. m.	2.31	.0025	.0423	5:40 p. m.	1.56	.0017	.0780
10:00 a. m.	3.83	.0041	.0299	6:03 a. m.	1.79	.0019	.0424	6:00 p. m.	1.56	.0017	.0786
10:10 a. m.	3.27	.0035	.0305	6:08 a. m.	1.56	.0017	.0426	6:25 p. m.	1.56	.0017	.0792
10:20 a. m.	2.74	.0030	.0310	6:20 a. m.	2.04	.0022	.0430	6:40 p. m.	1.48	.0016	.0797
10:40 a. m.	2.12	.0023	.0319	6:28 a. m.	2.41	.0026	.0433	7:00 p. m.	1.40	.0015	.0802
11:00 a. m.	1.71	.0018	.0326	6:40 a. m.	2.20	.0024	.0438	7:20 p. m.	1.34	.0014	.0807
11:20 a. m.	1.56	.0017	.0332	6:46 a. m.	2.04	.0022	.0440	7:40 p. m.	1.28	.0014	.0812
11:40 a. m.	1.40	.0015	.0337	7:00 a. m.	1.63	.0018	.0445	8:00 p. m. ³	1.15	.0012	.0816
11:50 a. m.	1.40	.0015	.0339	7:10 a. m.	2.95	.0032	.0449	9:00 p. m.	1.04	.0011	.0828
12:00 m.	1.34	.0014	.0341	7:20 a. m.	3.27	.0035	.0455	9:50 p. m.	.946	.0010	.0836
12:20 p. m.	1.15	.0012	.0345	7:30 a. m.	3.55	.0038	.0461	11:00 p. m.	.812	.0009	.0848
12:40 p. m.	1.09	.0012	.0349	7:40 a. m.	4.40	.0047	.0468	12:00 p. m.	.736	.0008	.0856
1:00 p. m.	.994	.0011	.0353	7:45 a. m.	4.54	.0049	.0472	Oct. 28:			
1:20 p. m.	.898	.0010	.0356	8:00 a. m.	4.26	.0046	.0484	12:20 a. m.	.698	.0008	.0859
1:40 p. m. ³	.812	.0009	.0359	8:20 a. m.	3.55	.0038	.0495	1:00 a. m.	.660	.0007	.0864
2:00 p. m.	.774	.0008	.0362	8:40 a. m.	3.16	.0034	.0510	2:30 a. m.	.564	.0006	.0873
3:00 p. m.	.628	.0007	.0370	9:00 a. m.	3.06	.0033	.0521	4:00 a. m.	.500	.0005	.0882
4:00 p. m.	.532	.0006	.0376	9:20 a. m.	2.95	.0032	.0532	5:10 a. m.	.448	.0005	.0888
5:00 p. m.	.448	.0005	.0382	9:32 a. m.	2.95	.0032	.0538	7:00 a. m.	.396	.0004	.0895
6:00 p. m.	.370	.0004	.0386	9:40 a. m.	3.06	.0033	.0542	8:20 a. m.	.370	.0004	.0900
7:00 p. m.	.329	.0004	.0390	10:00 a. m.	3.16	.0034	.0553	9:30 a. m.	.329	.0004	.0905
8:00 p. m.	.288	.0003	.0394	10:20 a. m.	3.69	.0040	.0565	10:30 a. m.	.308	.0003	.0909
9:10 p. m.	.251	.0003	.0397	10:30 a. m.	3.83	.0041	.0572	11:30 a. m.	.288	.0003	.0912
10:00 p. m.	.235	.0002	.0399	10:40 a. m.	3.83	.0041	.0579	12:30 p. m.	.267	.0003	.0915
11:30 p. m.	.204	.0002	.0403	10:45 a. m.	3.98	.0043	.0583	1:30 p. m.	.251	.0003	.0918
12:00 p. m.	.190	.0002	.0404	10:54 a. m.	4.86	.0052	.0590	3:00 p. m.	.235	.0002	.0922
Oct. 27:				11:00 a. m.	4.68	.0050	.0595	5:00 p. m.	.219	.0002	.0927
1:00 a. m.	.177	.0002	.0406	11:20 a. m.	3.98	.0043	.0610	7:00 p. m.	.204	.0002	.0931
2:20 a. m.	.164	.0002	.0408	11:26 a. m.	4.26	.0046	.0614	8:30 p. m.	.190	.0002	.0934
3:20 a. m.	.152	.0002	.0410	11:40 a. m.	3.83	.0041	.0624	10:30 p. m.	.177	.0002	.0938
3:50 a. m. ²	.141	.0002	.0411	12:00 m.	3.41	.0037	.0637	12:00 p. m.	.164	.0002	.0941
4:10 a. m.	.141	.0002		12:20 p. m.	3.27	.0035	.0649	Oct. 29:			
4:20 a. m.	.152	.0002		12:40 p. m.	3.16	.0034	.0660	2:30 a. m.	.152	.0002	.0945
4:40 a. m.	.152	.0002		1:00 p. m.	2.95	.0032	.0671	5:20 a. m.	.141	.0002	.0949
4:45 a. m.	.164	.0002		1:20 p. m.	2.63	.0028	.0681	8:00 a. m.	.131	.0001	.0953
4:50 a. m.	.204	.0002		1:40 p. m.	2.41	.0026	.0690	11:00 a. m.	.121	.0001	.0957
5:00 a. m.	.235	.0002		2:00 p. m.	2.31	.0025	.0699	11:20 a. m.	.121	.0001	.0957
5:05 a. m.	.329	.0004		2:20 p. m.	2.20	.0024	.0707	2:00 p. m.	.112	.0001	.0960
5:10 a. m.	.422	.0004		2:40 p. m.	2.20	.0024	.0715	5:00 p. m.	.104	.0001	.0963
5:15 a. m.	.532	.0006		3:00 p. m.	2.12	.0023	.0723	7:30 p. m.	.104	.0001	.0966
5:20 a. m.	.628	.0007		3:15 p. m.	2.41	.0026	.0729	12:00 p. m.	.096	.0001	.0971

² Rain began.³ Rain ended.

TABLE 63.—Run-off from watershed 93 for selected storms, 1939

[Area 1,078 acres; rainfall measured at recording rain gages 1, 7, 8]

Date and time	Discharge ¹	Accumulated run-off	Date and time	Discharge ¹	Accumulated run-off	Date and time	Discharge ¹	Accumulated run-off			
STORM OF FEB. 14-15, TOTAL RAINFALL 1.43 INCHES			STORM OF FEB. 14-15, TOTAL RAINFALL 1.43 INCHES—Continued			STORM OF FEB. 14-15, TOTAL RAINFALL 1.4 INCHES—Continued					
Feb. 14:	Sec.-ft.	In. per hr.	In.	Feb. 15—Con.	Sec.-ft.	In. per hr.	In.	Feb. 15—Con.	Sec.-ft.	In. per hr.	In.
8:20 p. m.-----	2.18	0.0020	0	2:30 a. m.-----	47.0	0.0432	0.0343	8:40 a. m.-----	17.8	0.0164	0.2547
8:40 p. m.-----	2.18	.0020	.0007	2:40 a. m.-----	59.0	.0543	.0424	9:00 a. m.-----	16.9	.0155	.2600
9:00 p. m.-----	2.27	.0021	.0014	2:50 a. m.-----	73.0	.0671	.0525	9:20 a. m.-----	16.5	.0152	.2651
9:20 p. m.-----	2.27	.0021	.0021	3:00 a. m.-----	92.4	.0650	.0652	9:40 a. m.-----	16.1	.0148	.2701
9:40 p. m.-----	2.38	.0022	.0028	3:10 a. m.-----	102	.0938	.0801	10:00 a. m.-----	15.7	.0144	.2750
10:00 p. m.-----	2.49	.0023	.0035	3:20 a. m.-----	100	.0919	.0956	10:20 a. m.-----	15.2	.0140	.2797
10:20 p. m.-----	2.59	.0024	.0043	3:30 a. m.-----	85.1	.0782	.1098	10:40 a. m.-----	14.4	.0132	.2843
10:40 p. m.-----	2.59	.0024	.0050	3:40 a. m.-----	73.0	.0671	.1219	11:00 a. m.-----	14.4	.0132	.2887
11:00 p. m.-----	2.81	.0026	.0058	3:50 a. m.-----	60.1	.0552	.1321	11:20 a. m.-----	14.0	.0129	.2930
11:20 p. m.-----	2.94	.0027	.0067	4:00 a. m.-----	50.7	.0466	.1406	11:40 a. m.-----	13.6	.0125	.2973
11:40 p. m.-----	3.21	.0029	.0076	4:20 a. m.-----	40.1	.0368	.1545	12:00 m.-----	13.2	.0121	.3014
12:00 p. m.-----	3.47	.0032	.0086	4:30 a. m.-----	35.2	.0324	.1608	12:20 p. m.-----	12.9	.0119	.3054
Feb. 15:				4:40 a. m.-----	33.1	.0304	.1655	12:40 p. m.-----	12.5	.0115	.3093
12:20 a. m.-----	3.91	.0036	.0097	5:00 a. m.-----	31.0	.0285	.1753	1:00 p. m.-----	12.2	.0112	.3130
12:40 a. m.-----	4.38	.0040	.0110	5:20 a. m.-----	29.6	.0272	.1846	1:20 p. m.-----	12.2	.0112	.3167
1:00 a. m.-----	5.28	.0049	.0125	5:40 a. m.-----	27.6	.0254	.1934	1:40 p. m.-----	11.8	.0108	.3204
1:20 a. m.-----	6.74	.0062	.0143	6:00 a. m.-----	26.4	.0243	.2017	2:00 p. m.-----	11.8	.0108	.3240
1:40 a. m.-----	9.30	.0086	.0168	6:20 a. m.-----	24.7	.0227	.2095	3:00 p. m.-----	11.2	.0103	.3346
1:50 a. m.-----	12.2	.0112	.0184	6:40 a. m.-----	24.1	.0222	.2170	4:00 p. m.-----	10.5	.0096	.3446
2:00 a. m.-----	16.5	.0152	.0206	7:00 a. m.-----	22.3	.0205	.2241	5:00 p. m.-----	9.87	.0091	.3540
2:10 a. m.-----	23.5	.0216	.0237	7:20 a. m.-----	21.3	.0196	.2308	6:00 p. m.-----	9.30	.0085	.3628
2:15 a. m.-----	29.6	.0272	.0257	7:40 a. m.-----	20.3	.0187	.2372	7:00 p. m.-----	9.01	.0083	.3712
2:20 a. m.-----	33.1	.0304	.0281	8:00 a. m.-----	19.3	.0177	.2433	8:00 p. m.-----	8.44	.0078	.3792
2:25 a. m.-----	40.1	.0369	.0309	8:20 a. m.-----	18.8	.0173	.2491	9:00 p. m.-----	8.19	.0075	.3868

¹ Observed flow without corrections for base flow.

TABLE 63.—Run-off from watershed 93 for selected storms, 1939—Continued

STORM OF FEB. 14-15, TOTAL RAINFALL 1.43 INCHES—Continued				STORM OF JUNE 18-19, TOTAL RAINFALL 3.12 INCHES—Continued				STORM OF JULY 8, TOTAL RAINFALL 1.04 INCHES—Continued			
Date and time	Discharge	Accumulated run-off		Date and time	Discharge	Accumulated run-off		Date and time	Discharge	Accumulated run-off	
Feb. 15—Con.	Sec.-ft.	In. per hr.	In.	June 19—Con.	Sec.-ft.	In. per hr.	In.	July 8—Con.	Sec.-ft.	In. per hr.	In.
10:00 p. m.-----	7.69	0.0071	0.3941	2:20 a. m.-----	23.5	0.0216	0.1051	1:00 p. m.-----	1.62	0.0015	0.0096
12:00 p. m.-----	7.19	0.0066	0.4078	2:40 a. m.-----	19.3	0.0177	0.1117	1:02 p. m.-----	2.27	0.0021	0.0096
Feb. 16:				3:00 a. m.-----	16.1	0.0148	0.1171	1:04 p. m.-----	3.34	0.0031	0.0097
2:00 a. m.-----	6.51	0.0060	0.4204	3:20 a. m.-----	14.0	0.0129	0.1217	1:06 p. m.-----	4.73	0.0044	0.0098
4:00 a. m.-----	6.06	0.0056	0.4320	3:30 a. m.-----	14.0	0.0129	0.1238	1:08 p. m.-----	6.74	0.0062	0.0100
5:00 a. m.-----	5.87	0.0054	0.4375	3:40 a. m.-----	14.4	0.0132	0.1260	1:10 p. m.-----	9.30	0.0086	0.0102
12:00 p. m.-----	5.87	0.0054	0.4753	4:00 a. m.-----	16.9	0.0155	0.1308	1:12 p. m.-----	12.5	0.0115	0.0105
3:00 p. m.-----	5.48	0.0050	0.4910	4:20 a. m.-----	19.3	0.0177	0.1363	1:14 p. m.-----	18.8	0.0173	0.0110
7:00 p. m.-----	5.09	0.0047	0.5104	4:30 a. m.-----	21.3	0.0196	0.1394	1:16 p. m.-----	27.0	0.0248	0.0117
12:00 p. m.-----	4.73	0.0043	0.5330	4:40 a. m.-----	21.3	0.0196	0.1427	1:18 p. m.-----	36.8	0.0338	0.0127
STORM OF JUNE 18-19, TOTAL RAINFALL 3.12 INCHES				4:50 a. m.-----	21.3	0.0196	0.1460	1:20 p. m.-----	34.5	0.0317	0.0138
June 18:				5:00 a. m.-----	20.8	0.0191	0.1492	1:22 p. m.-----	31.7	0.0292	0.0148
7:30 a. m.-----	0.083	0.0001	0	5:20 a. m.-----	19.8	0.0182	0.1554	1:32 p. m.-----	41.7	0.0384	0.0204
7:40 a. m.-----	0.083	0.0001	0	5:40 a. m.-----	18.3	0.0168	0.1612	1:40 p. m.-----	36.0	0.0331	0.0252
8:00 a. m.-----	1.02	0.0001	0	6:00 a. m.-----	16.1	0.0148	0.1669	1:50 p. m.-----	27.0	0.0248	0.0300
8:20 a. m.-----	1.21	0.0001	0.0001	6:20 a. m.-----	14.0	0.0129	0.1715	2:00 p. m.-----	22.9	0.0211	0.0339
8:40 a. m.-----	1.41	0.0001	0.0001	6:40 a. m.-----	12.5	0.0115	0.1755	2:20 p. m.-----	17.3	0.0159	0.0401
8:50 a. m.-----	1.51	0.0001	0.0002	7:00 a. m.-----	11.2	0.0103	0.1791	2:40 p. m.-----	13.2	0.0121	0.0448
8:55 a. m.-----	1.62	0.0001	0.0002	7:20 a. m.-----	10.2	0.0094	0.1824	3:00 p. m.-----	11.8	0.0108	0.0486
9:00 a. m.-----	2.12	0.0002	0.0003	7:40 a. m.-----	9.30	0.0085	0.1854	3:20 p. m.-----	9.58	0.0088	0.0519
9:10 a. m.-----	2.55	0.0002	0.0004	8:00 a. m.-----	8.73	0.0080	0.1882	3:40 p. m.-----	7.44	0.0068	0.0545
9:20 a. m.-----	3.43	0.0003	0.0004	8:20 a. m.-----	8.19	0.0075	0.1908	4:00 p. m.-----	6.06	0.0056	0.0566
9:30 a. m.-----	4.55	0.0004	0.0005	8:40 a. m.-----	7.69	0.0071	0.1932	4:30 p. m.-----	4.73	0.0044	0.0591
9:40 a. m.-----	5.88	0.0005	0.0006	8:50 a. m.-----	7.44	0.0068	0.1944	5:00 p. m.-----	4.05	0.0037	0.0611
9:45 a. m.-----	6.85	0.0006	0.0006	9:00 a. m.-----	7.44	0.0068	0.1955	5:30 p. m.-----	3.47	0.0032	0.0629
9:50 a. m.-----	8.69	0.0008	0.0007	10:00 a. m.-----	6.29	0.0058	0.2018	6:00 p. m.-----	3.21	0.0030	0.0643
9:55 a. m.-----	0.4	0.0010	0.0008	11:00 a. m.-----	5.67	0.0052	0.2073	7:00 p. m.-----	2.59	0.0024	0.0670
10:00 a. m.-----	1.09	0.0010	0.0009	12:00 p. m.-----	4.73	0.0043	0.2121	8:00 p. m.-----	2.27	0.0021	0.0692
10:20 a. m.-----	1.13	0.0010	0.0012	1:00 p. m.-----	4.05	0.0037	0.2161	9:00 p. m.-----	2.01	0.0018	0.0712
10:40 a. m.-----	1.47	0.0014	0.0016	2:00 p. m.-----	3.62	0.0033	0.2196	10:00 p. m.-----	1.84	0.0017	0.0730
11:00 a. m.-----	1.69	0.0016	0.0021	3:00 p. m.-----	3.34	0.0031	0.2228	12:00 p. m.-----	1.62	0.0015	0.0762
11:20 a. m.-----	2.27	0.0021	0.0027	4:00 p. m.-----	3.07	0.0028	0.2257	July 9:			
11:30 a. m.-----	3.34	0.0031	0.0031	5:00 p. m.-----	2.70	0.0025	0.2283	3:00 a. m.-----	1.41	0.0013	0.0804
11:40 a. m.-----	4.05	0.0037	0.0037	6:00 p. m.-----	2.49	0.0023	0.2307	6:00 a. m.-----	1.24	0.0011	0.0840
11:45 a. m.-----	4.73	0.0043	0.0039	7:00 p. m.-----	2.27	0.0021	0.2329	9:00 a. m.-----	1.13	0.0010	0.0873
11:50 a. m.-----	6.29	0.0058	0.0043	8:00 p. m.-----	2.01	0.0018	0.2368	12:00 m.-----	1.04	0.0010	0.0903
12:00 p. m.-----	7.94	0.0073	0.0054	11:00 p. m.-----	1.84	0.0017	0.2403	3:00 p. m.-----	0.869	0.0008	0.0929
12:20 p. m.-----	9.58	0.0088	0.0081	12:00 p. m.-----	1.77	0.0016	0.2420	6:00 p. m.-----	0.790	0.0007	0.0952
12:40 p. m.-----	12.5	0.0115	0.0115	June 20:				9:00 p. m.-----	0.750	0.0007	0.0973
1:00 p. m.-----	14.0	0.0129	0.0155	8:00 a. m.-----	1.47	0.0014	0.2539	12:00 p. m.-----	0.750	0.0007	0.0994
1:20 p. m.-----	13.2	0.0121	0.0197	1:00 p. m.-----	1.24	0.0011	0.2602				
1:30 p. m.-----	13.6	0.0125	0.0218	3:00 p. m.-----	1.13	0.0010	0.2624				
1:40 p. m.-----	13.2	0.0121	0.0239	7:00 p. m.-----	0.948	0.0009	0.2662				
2:00 p. m.-----	11.2	0.0103	0.0276	9:00 p. m.-----	0.908	0.0008	0.2679				
2:20 p. m.-----	9.01	0.0083	0.0307	12:00 p. m.-----	0.908	0.0008	0.2704				
2:40 p. m.-----	7.69	0.0071	0.0333	STORM OF JULY 8, TOTAL RAINFALL 1.04 INCHES							
3:00 p. m.-----	6.29	0.0058	0.0354	July 8:							
3:20 p. m.-----	5.28	0.0049	0.0372	5:08 a. m.-----				Oct. 25:			
3:40 p. m.-----	4.20	0.0039	0.0387	5:10 a. m.-----	0.290	0.0003	0	12:17 a. m.-----	0.003	T	0
4:00 p. m.-----	3.47	0.0032	0.0399	5:20 a. m.-----	0.308	0.0003	0	8:00 a. m.-----	0.003	T	0
4:20 p. m.-----	3.21	0.0029	0.0409	5:40 a. m.-----	0.325	0.0003	0.0001	8:20 a. m.-----	0.003	T	0
4:40 p. m.-----	2.81	0.0026	0.0418	6:00 a. m.-----	0.325	0.0003	0.0002	8:40 a. m.-----	0.005	T	0
5:00 p. m.-----	2.49	0.0023	0.0426	6:20 a. m.-----	0.325	0.0003	0.0003	9:00 a. m.-----	0.005	T	0
5:20 p. m.-----	2.27	0.0021	0.0433	6:40 a. m.-----	0.325	0.0003	0.0004	9:20 a. m.-----	0.007	T	0
5:40 p. m.-----	2.10	0.0019	0.0439	7:00 a. m.-----	0.325	0.0003	0.0005	9:40 a. m.-----	0.007	T	0
6:00 p. m.-----	2.01	0.0018	0.0445	7:20 a. m.-----	0.325	0.0003	0.0006	10:00 a. m.-----	0.011	T	0
6:20 p. m.-----	1.84	0.0017	0.0451	7:39 a. m.-----	0.325	0.0003	0.0007	10:05 a. m.-----	0.013	T	0
6:40 p. m.-----	1.77	0.0016	0.0456	7:40 a. m.-----	0.365	0.0003		10:10 a. m.-----	0.017	T	0
6:50 p. m.-----	1.77	0.0016	0.0459	7:45 a. m.-----	0.455	0.0004		10:15 a. m.-----	0.021	T	0
7:00 p. m.-----	1.77	0.0016	0.0462	7:50 a. m.-----	0.535	0.0005		10:20 a. m.-----	0.023	T	0
7:20 p. m.-----	2.01	0.0018	0.0467	7:55 a. m.-----	0.620	0.0006	0.0008	10:30 a. m.-----	0.039	T	0
7:40 p. m.-----	2.18	0.0020	0.0473	8:00 a. m.-----	0.829	0.0008	0.0008	10:40 a. m.-----	0.045	T	0
8:00 p. m.-----	2.70	0.0025	0.0480	8:05 a. m.-----	1.13	0.0010	0.0009	11:00 a. m.-----	0.057	T	0
8:20 p. m.-----	2.81	0.0026	0.0488	8:10 a. m.-----	1.47	0.0014	0.0010	11:20 a. m.-----	0.070	0.0001	0
8:40 p. m.-----	2.94	0.0027	0.0497	8:11 a. m.-----	2.10	0.0019	0.0011	11:40 a. m.-----	0.076	0.0001	0
9:00 p. m.-----	3.07	0.0028	0.0506	8:12 a. m.-----	2.94	0.0027	0.0013	12:00 m.-----	0.083	0.0001	0
9:20 p. m.-----	3.34	0.0031	0.0516	8:15 a. m.-----	3.91	0.0036	0.0015	12:20 p. m.-----	0.092	0.0001	0
9:40 p. m.-----	3.34	0.0031	0.0526	8:20 a. m.-----	4.05	0.0037	0.0028	12:40 p. m.-----	0.102	0.0001	0
10:00 p. m.-----	3.47	0.0032	0.0536	8:34 a. m.-----	4.56	0.0042	0.0037	1:00 p. m.-----	0.121	0.0001	0
10:20 p. m.-----	3.76	0.0034	0.0547	8:40 a. m.-----	4.20	0.0039	0.0041	1:20 p. m.-----	0.141	0.0001	0
10:40 p. m.-----	4.20	0.0039	0.0559	8:48 a. m.-----	3.34	0.0031	0.0046	1:40 p. m.-----	0.141	0.0001	0
11:00 p. m.-----	4.73	0.0043	0.0573	9:00 a. m.-----	2.59	0.0024	0.0051	2:00 p. m.-----	0.151	0.0001	0
11:20 p. m.-----	4.91	0.0045	0.0588	9:07 a. m.-----	2.70	0.0025	0.0053	2:20 p. m.-----	0.162	0.0001	0
11:40 p. m.-----	5.09	0.0047	0.0603	9:20 a. m.-----	2.27	0.0021	0.0059	2:30 p. m.-----	0.172	0.0002	0
12:00 p. m.-----	5.67	0.0052	0.0619	9:40 a. m.-----	1.69	0.0016	0.0065	2:40 p. m.-----	0.197	0.0002	0
June 19:				10:00 a. m.-----	1.35	0.0012	0.0070	3:00 p. m.-----	0.241	0.0002	0.0001
12:15 a. m.-----	6.06	0.0056	0.0632	10:20 a. m.-----	1.13	0.0010	0.0074	3:20 p. m.-----	0.308	0.0003	0.0002
12:20 a. m.-----	6.74	0.0062	0.0637	10:40 a. m.-----	0.994	0.0009	0.0077	3:40 p. m.-----	0.325	0.0003	0.0003
12:30 a. m.-----	9.30	0.0085	0.0649	11:00 a. m.-----	0.948	0.0009	0.0080	3:50 p. m.-----	0.343	0.00	

¹ Rain began.³ Rain ended.

TABLE 63.—Run-off from watershed 93 for selected storms, 1939—Continued

STORM OF OCTOBER 25-27, TOTAL RAIN-FALL 3.52 INCHES—Continued				STORM OF OCTOBER 25-27, TOTAL RAIN-FALL 3.52 INCHES—Continued				STORM OF OCTOBER 25-27, TOTAL RAIN-FALL 3.52 INCHES—Continued			
Date and time	Discharge	Accumulated run-off		Date and time	Discharge	Accumulated run-off		Date and time	Discharge	Accumulated run-off	
Oct. 25—Con.	Sec.-ft.	In. per hr.	In.	Oct. 26—Con.	Sec.-ft.	In. per hr.	In.	Oct. 27—Con.	Sec.-ft.	In. per hr.	In.
6:20 p. m.	1.69	0.0016	0.0024	9:10 a. m. ³	16.5	0.0152	0.0274	10:00 a. m.	5.28	0.0048	0.0666
6:40 p. m.	1.77	0.0016	0.0029	9:15 a. m.	12.5	0.0115	0.0285	10:10 a. m.	6.74	0.0062	0.0675
7:00 p. m.	1.84	0.0017	0.0034	9:20 a. m.	9.58	0.0088	0.0293	10:20 a. m.	6.51	0.0060	0.0685
7:20 p. m.	1.84	0.0017	0.0040	9:25 a. m.	8.19	0.0075	0.0300	10:40 a. m.	5.67	0.0052	0.0704
7:40 p. m.	1.69	0.0016	0.0045	9:34 a. m.	7.69	0.0071	0.0311	10:55 a. m.	5.48	0.0050	0.0717
8:00 p. m.	1.47	0.0014	0.0050	9:40 a. m.	8.19	0.0075	0.0318	11:00 a. m.	5.67	0.0052	0.0721
8:20 p. m.	1.35	0.0012	0.0054	9:50 a. m.	6.74	0.0062	0.0329	11:05 a. m.	5.87	0.0054	0.0725
8:40 p. m.	1.24	0.0011	0.0058	10:00 a. m.	5.48	0.0050	0.0338	11:20 a. m.	5.28	0.0048	0.0738
9:00 p. m.	1.18	0.0011	0.0062	10:20 a. m.	4.05	0.0037	0.0353	11:30 a. m.	4.91	0.0045	0.0746
9:20 p. m.	1.09	0.0010	0.0065	10:40 a. m.	2.94	0.0027	0.0364	11:40 a. m.	4.91	0.0045	0.0754
9:40 p. m.	.994	0.0009	0.0068	11:00 a. m.	2.18	0.0020	0.0372	11:45 a. m.	4.91	0.0045	0.0758
10:00 p. m.	.948	0.0009	0.0071	11:20 a. m.	1.84	0.0017	0.0378	12:00 m.	4.38	0.0040	0.0768
10:20 p. m.	.869	0.0008	0.0074	11:40 a. m.	1.62	0.0015	0.0383	12:20 p. m.	3.91	0.0036	0.0781
10:30 p. m.	.829	0.0008	0.0075	12:00 m.	1.47	0.0014	0.0388	12:40 p. m.	3.62	0.0033	0.0792
10:40 p. m.	.869	0.0008	0.0076	12:20 p. m.	1.41	0.0013	0.0393	1:00 p. m.	3.62	0.0033	0.0803
10:50 p. m.	1.04	0.0010	0.0078	12:40 p. m.	1.24	0.0011	0.0397	1:20 p. m.	3.21	0.0030	0.0814
11:00 p. m.	1.30	0.0012	0.0080	1:00 p. m.	1.13	0.0010	0.0400	1:35 p. m.	2.94	0.0027	0.0821
11:10 p. m.	1.35	0.0012	0.0082	2:00 p. m.	.908	0.0008	0.0409	2:00 p. m.	2.94	0.0027	0.0832
11:15 p. m.	1.77	0.0016	0.0083	3:00 p. m.	.790	0.0007	0.0417	2:20 p. m.	2.70	0.0025	0.0841
11:20 p. m.	2.38	0.0022	0.0085	3:10 p. m.	.790	0.0007	0.0418	2:40 p. m.	2.94	0.0027	0.0850
11:30 p. m.	2.49	0.0023	0.0089	3:20 p. m.	.790	0.0007	0.0419	3:00 p. m.	2.70	0.0025	0.0859
11:40 p. m.	2.70	0.0025	0.0093	4:00 p. m.	.718	0.0007	0.0424	3:20 p. m.	2.59	0.0024	0.0867
11:45 p. m.	2.94	0.0027	0.0095	5:00 p. m.	.620	0.0006	0.0430	3:40 p. m.	2.81	0.0026	0.0875
11:57 p. m.	2.70	0.0025	0.0100	6:10 p. m.	.535	0.0005	0.0437	4:00 p. m.	2.59	0.0024	0.0883
12:00 p. m.	2.81	0.0026	0.0101	7:00 p. m.	.482	0.0004	0.0440	4:20 p. m.	2.38	0.0022	0.0891
Oct. 26:				8:00 p. m.	.432	0.0004	0.0444	4:40 p. m.	2.27	0.0021	0.0898
12:12 a. m.	3.62	0.0033	0.0107	9:00 p. m.	.388	0.0004	0.0448	5:00 p. m.	2.18	0.0020	0.0905
12:20 a. m.	3.34	0.0031	0.0111	10:00 p. m.	.343	0.0003	0.0452	5:20 p. m.	2.10	0.0019	0.0912
12:40 a. m.	2.59	0.0024	0.0120	11:30 p. m.	.308	0.0003	0.0456	5:40 p. m.	1.93	0.0018	0.0918
1:00 a. m.	2.10	0.0019	0.0127	12:00 p. m.	.290	0.0003	0.0457	6:00 p. m.	1.84	0.0017	0.0924
1:10 a. m.	2.27	0.0021	0.0130	Oct. 27:				6:20 p. m.	1.84	0.0017	0.0930
1:20 a. m.	2.18	0.0020	0.0133	1:00 a. m.	.273	0.0002	0.0459	6:40 p. m.	1.77	0.0016	0.0935
1:30 a. m.	2.18	0.0020	0.0136	2:10 a. m.	.255	0.0002	0.0462	7:00 p. m.	1.69	0.0016	0.0940
1:40 a. m.	2.18	0.0020	0.0139	3:20 a. m.	.241	0.0002	0.0465	7:20 p. m.	1.69	0.0016	0.0945
1:45 a. m.	2.18	0.0020	0.0141	3:50 a. m. ²	.226	0.0002	0.0466	7:40 p. m.	1.54	0.0014	0.0950
2:00 a. m.	2.01	0.0018	0.0146	4:00 a. m.	.226	0.0002	0.0466	8:00 p. m. ³	1.47	0.0014	0.0955
2:20 a. m.	1.84	0.0017	0.0152	4:20 a. m.	.226	0.0002	0.0467	9:00 p. m.	1.30	0.0012	0.0968
2:40 a. m.	2.01	0.0018	0.0158	4:40 a. m.	.241	0.0002	0.0467	10:20 p. m.	1.13	0.0010	0.0983
3:00 a. m.	1.93	0.0018	0.0164	4:50 a. m.	.308	0.0003	0.0468	11:30 p. m.	.994	0.0009	0.0995
3:20 a. m.	1.69	0.0016	0.0170	5:00 a. m.	.388	0.0004	0.0468	12:00 p. m.	.948	0.0009	0.0999
3:40 a. m.	1.54	0.0014	0.0175	5:05 a. m.	.482	0.0004	0.0469	Oct. 28:			
4:00 a. m.	1.41	0.0013	0.0180	5:10 a. m.	.620	0.0006	0.0470	1:30 a. m.	.829	0.0008	0.1011
4:20 a. m.	1.30	0.0012	0.0184	5:13 a. m.	.790	0.0007	0.0471	2:50 a. m.	.750	0.0007	0.1022
4:40 a. m.	1.18	0.0011	0.0188	5:17 a. m.	.994	0.0009	0.0472	4:00 a. m.	.685	0.0006	0.1029
5:00 a. m.	1.09	0.0010	0.0191	5:20 a. m.	1.24	0.0011	0.0473	5:20 a. m.	.620	0.0006	0.1037
5:20 a. m.	.994	0.0009	0.0194	5:23 a. m.	1.69	0.0016	0.0474	7:00 a. m.	.561	0.0005	0.1047
5:40 a. m.	.948	0.0009	0.0197	5:25 a. m.	2.27	0.0021	0.0475	8:30 a. m.	.508	0.0005	0.1054
6:00 a. m.	.869	0.0008	0.0200	5:28 a. m.	3.21	0.0030	0.0476	9:05 a. m.	.482	0.0004	0.1056
6:20 a. m.	.829	0.0008	0.0203	5:35 a. m.	4.73	0.0044	0.0477	9:20 a. m.	.535	0.0005	0.1057
6:40 a. m.	.790	0.0007	0.0206	5:38 a. m.	4.73	0.0044	0.0479	10:30 a. m.	.508	0.0005	0.1063
7:00 a. m.	.718	0.0007	0.0208	5:40 a. m.	4.73	0.0044	0.0480	10:40 a. m.	.482	0.0004	0.1064
7:20 a. m.	.685	0.0006	0.0210	5:50 a. m.	3.91	0.0036	0.0487	11:40 a. m.	.455	0.0004	0.1068
7:40 a. m.	.685	0.0006	0.0212	5:56 a. m.	3.62	0.0033	0.0490	1:00 p. m.	.432	0.0004	0.1073
8:00 a. m.	.653	0.0006	0.0214	6:00 a. m.	3.76	0.0034	0.0492	1:40 p. m.	.410	0.0004	0.1076
8:20 a. m.	.653	0.0006	0.0216	6:05 a. m.	4.73	0.0044	0.0495	3:00 p. m.	.388	0.0004	0.1081
8:30 a. m.	.653	0.0006	0.0217	6:10 a. m.	5.28	0.0048	0.0499	5:00 p. m.	.343	0.0003	0.1089
8:37 a. m.	.829	0.0008	0.0218	6:20 a. m.	6.74	0.0062	0.0508	6:40 p. m.	.325	0.0003	0.1094
8:38 a. m.	.994	0.0009	0.0218	6:40 a. m.	5.09	0.0047	0.0526	8:00 p. m.	.308	0.0003	0.1098
8:40 a. m.	1.18	0.0011	0.0219	7:00 a. m.	5.28	0.0048	0.0542	10:20 p. m.	.308	0.0003	0.1105
8:43 a. m.	1.30	0.0012	0.0219	7:20 a. m.	4.20	0.0039	0.0557	11:30 p. m.	.290	0.0003	0.1108
8:45 a. m.	1.69	0.0016	0.0219	7:36 a. m.	3.76	0.0034	0.0567	12:00 p. m.	.290	0.0003	0.1109
8:46 a. m.	2.27	0.0021	0.0220	8:00 a. m.	4.73	0.0044	0.0583	Oct. 29:			
8:49 a. m.	3.21	0.0030	0.0220	8:20 a. m.	4.56	0.0042	0.0597	1:00 a. m.	.273	0.0002	0.1111
8:50 a. m.	3.76	0.0034	0.0221	8:40 a. m.	4.38	0.0040	0.0611	3:00 a. m.	.255	0.0002	0.1116
8:53 a. m.	5.28	0.0048	0.0223	8:48 a. m.	4.20	0.0039	0.0616	5:00 a. m.	.241	0.0002	0.1120
8:54 a. m.	6.96	0.0064	0.0224	9:00 a. m.	4.73	0.0044	0.0624	6:40 a. m.	.226	0.0002	0.1123
8:55 a. m.	9.87	0.0091	0.0225	9:20 a. m.	4.38	0.0040	0.0638	9:00 a. m.	.212	0.0002	0.1128
8:56 a. m.	15.7	0.0144	0.0227	9:30 a. m.	4.20	0.0039	0.0645	12:00 m.	.197	0.0002	0.1134
8:58 a. m.	22.3	0.0205	0.0233	9:40 a. m.	4.56	0.0042	0.0652	3:00 p. m.	.183	0.0002	0.1139
9:00 a. m.	25.8	0.0237	0.0240	9:50 a. m.	4.91	0.0045	0.0659	6:30 p. m.	.172	0.0002	0.1145
9:02 a. m.	26.4	0.0243	0.0248	9:57 a. m.	4.91	0.0045	0.0664	12:00 p. m.	.172	0.0002	0.1154
9:05 a. m.	22.3	0.0205	0.0259								

² Rain began.³ Rain ended.

TABLE 64.—Run-off from watershed 94 for selected storms, 1939

[Area 1,517 acres; rainfall measured at recording rain gages 1, 7, 8]

STORM OF FEB. 14-15, TOTAL RAINFALL 1.42 INCHES				STORM OF JUNE 18-19, TOTAL RAINFALL 3.10 INCHES				STORM OF JUNE 18-19, TOTAL RAINFALL 3.10 INCHES—Continued			
Date and time	Discharge ¹	Accumulated run-off		Date and time	Discharge ¹	Accumulated run-off		Date and time	Discharge ¹	Accumulated run-off	
Feb. 14:	Sec.-ft.	In. per hr.	In.	June 18:	Sec.-ft.	In. per hr.	In.	June 19—Con.	Sec.-ft.	In. per hr.	In.
8:20 p. m.-----	2.41	0.0016	0	7:30 a. m.-----	0	0	0	3:20 a. m.-----	19.0	0.0124	0.1085
8:40 p. m.-----	2.41	.0016	.0005	7:40 a. m.-----	.071	0	0	3:30 a. m.-----	18.7	.0122	.1105
9:00 p. m.-----	2.50	.0017	.0011	8:00 a. m.-----	.071	0	0	3:40 a. m.-----	18.7	.0122	.1125
9:20 p. m.-----	2.60	.0017	.0017	8:20 a. m.-----	.153	.0001	0	4:00 a. m.-----	20.5	.0134	.1168
9:40 p. m.-----	2.60	.0017	.0023	8:40 a. m.-----	.153	.0001	.0001	4:20 a. m.-----	23.8	.0155	.1216
10:00 p. m.-----	2.60	.0017	.0028	8:50 a. m.-----	.153	.0001	.0001	4:40 a. m.-----	26.6	.0174	.1271
10:20 p. m.-----	2.70	.0018	.0034	9:00 a. m.-----	.153	.0001	.0002	4:50 a. m.-----	27.2	.0177	.1300
10:40 p. m.-----	2.89	.0019	.0040	9:10 a. m.-----	.153	.0001	.0002	5:00 a. m.-----	26.8	.0177	.1330
11:00 p. m.-----	3.14	.0021	.0047	9:20 a. m.-----	.306	.0002	.0002	5:20 a. m.-----	25.6	.0167	.1387
11:20 p. m.-----	3.28	.0022	.0054	9:25 a. m.-----	.306	.0002	.0002	5:40 a. m.-----	24.2	.0158	.1441
11:40 p. m.-----	3.60	.0024	.0062	9:30 a. m.-----	.460	.0003	.0003	6:00 a. m.-----	21.5	.0142	.1491
12:00 p. m.-----	3.93	.0026	.0070	9:40 a. m.-----	.613	.0004	.0003	6:20 a. m.-----	19.6	.0128	.1536
Feb. 15:				9:50 a. m.-----	.613	.0004	.0004	6:40 a. m.-----	16.8	.0110	.1576
12:20 a. m.-----	4.52	.0030	.0080	10:00 a. m.-----	.766	.0005	.0004	7:00 a. m.-----	15.3	.0100	.1611
12:40 a. m.-----	5.00	.0033	.0091	10:10 a. m.-----	.766	.0005	.0005	7:20 a. m.-----	14.1	.0092	.1643
1:00 a. m.-----	6.20	.0041	.0103	10:20 a. m.-----	.766	.0005	.0006	7:40 a. m.-----	12.6	.0082	.1672
1:20 a. m.-----	8.17	.0054	.0119	10:30 a. m.-----	1.07	.0007	.0007	8:00 a. m.-----	11.4	.0075	.1698
1:40 a. m.-----	12.1	.0080	.0141	10:40 a. m.-----	1.53	.0010	.0008	8:20 a. m.-----	10.9	.0071	.1722
1:50 a. m.-----	15.4	.0102	.0156	10:50 a. m.-----	1.68	.0011	.0010	8:40 a. m.-----	10.3	.0067	.1745
2:00 a. m.-----	20.6	.0136	.0176	11:00 a. m.-----	1.84	.0012	.0012	8:50 a. m.-----	9.95	.0065	.1765
2:05 a. m.-----	23.9	.0158	.0188	11:10 a. m.-----	1.99	.0013	.0014	9:00 a. m.-----	9.56	.0063	.1767
2:10 a. m.-----	28.7	.0190	.0198	11:20 a. m.-----	2.60	.0017	.0017	10:00 a. m.-----	8.22	.0054	.1825
2:15 a. m.-----	33.4	.0221	.0215	11:30 a. m.-----	3.68	.0024	.0020	11:00 a. m.-----	7.20	.0048	.1876
2:20 a. m.-----	39.8	.0263	.0235	11:35 a. m.-----	4.60	.0030	.0022	12:00 m.-----	6.04	.0040	.1920
2:25 a. m.-----	44.8	.0296	.0258	11:40 a. m.-----	5.52	.0036	.0025	1:00 p. m.-----	5.23	.0035	.1958
2:30 a. m.-----	53.2	.0352	.0285	11:50 a. m.-----	7.52	.0049	.0032	2:00 p. m.-----	4.86	.0032	.1992
2:35 a. m.-----	60.2	.0398	.0316	12:00 m.-----	8.89	.0058	.0041	3:00 p. m.-----	4.35	.0029	.2022
2:40 a. m.-----	65.3	.0445	.0351	12:05 p. m.-----	9.35	.0061	.0046	4:00 p. m.-----	3.86	.0026	.2050
2:45 a. m.-----	74.8	.0495	.0390	12:15 p. m.-----	12.6	.0082	.0058	5:00 p. m.-----	3.42	.0023	.2074
2:50 a. m.-----	83.3	.0551	.0433	12:20 p. m.-----	13.0	.0085	.0065	6:00 p. m.-----	2.89	.0019	.2095
3:00 a. m.-----	101.0	.0668	.0535	12:40 p. m.-----	15.6	.0102	.0097	7:00 p. m.-----	2.64	.0017	.2113
3:10 a. m.-----	121.0	.0800	.0657	12:50 p. m.-----	17.8	.0116	.0115	8:00 p. m.-----	2.52	.0017	.2130
3:15 a. m.-----	124.0	.0820	.0724	1:00 p. m.-----	17.8	.0116	.0134	9:00 p. m.-----	2.31	.0015	.2146
3:20 a. m.-----	124.0	.0820	.0792	1:13 p. m.-----	18.2	.0119	.0160	11:00 p. m.-----	2.11	.0014	.2174
3:27 a. m.-----	120.0	.0793	.0886	1:20 p. m.-----	18.2	.0119	.0174	12:00 p. m.-----	2.01	.0013	.2188
3:35 a. m.-----	104.0	.0687	.0985	1:30 p. m.-----	17.3	.0113	.0193	June 20:			
3:40 a. m.-----	94.2	.0623	.1040	1:40 p. m.-----	17.3	.0113	.0212	2:00 a. m.-----	1.85	.0012	.2212
3:50 a. m.-----	77.0	.0509	.1134	2:00 p. m.-----	15.3	.0100	.0248	4:00 a. m.-----	1.76	.0012	.2236
4:00 a. m.-----	64.4	.0426	.1212	2:20 p. m.-----	12.6	.0082	.0278	8:00 a. m.-----	1.53	.0010	.2280
4:10 a. m.-----	56.1	.0371	.1278	2:30 p. m.-----	10.9	.0071	.0291	11:00 a. m.-----	1.40	.0009	.2310
4:20 a. m.-----	50.2	.0332	.1337	2:40 p. m.-----	9.95	.0065	.0302	3:00 p. m.-----	1.10	.0007	.2342
4:30 a. m.-----	46.1	.0305	.1390	3:00 p. m.-----	8.27	.0054	.0322	7:00 p. m.-----	.903	.0006	.2366
4:40 a. m.-----	43.0	.0284	.1439	3:20 p. m.-----	6.74	.0044	.0339	12:00 p. m.-----	.903	.0006	.2396
5:00 a. m.-----	37.5	.0248	.1528	3:40 p. m.-----	5.66	.0037	.0352				
5:20 a. m.-----	34.6	.0229	.1607	4:00 p. m.-----	4.75	.0031	.0363				
5:40 a. m.-----	32.5	.0215	.1681	4:20 p. m.-----	4.13	.0027	.0373				
6:00 a. m.-----	30.8	.0204	.1751	4:40 p. m.-----	3.52	.0023	.0381				
6:20 a. m.-----	29.8	.0197	.1818	5:00 p. m.-----	3.22	.0021	.0388				
6:40 a. m.-----	28.3	.0187	.1882	5:20 p. m.-----	2.92	.0019	.0395				
7:00 a. m.-----	27.3	.0180	.1943	5:40 p. m.-----	2.61	.0017	.0401				
7:20 a. m.-----	25.7	.0170	.2001	6:00 p. m.-----	2.30	.0015	.0406				
7:40 a. m.-----	24.3	.0161	.2056	6:20 p. m.-----	2.30	.0015	.0411				
8:00 a. m.-----	23.4	.0155	.2109	6:40 p. m.-----	1.99	.0013	.0416				
8:20 a. m.-----	22.5	.0149	.2160	7:00 p. m.-----	1.99	.0013	.0420				
8:40 a. m.-----	21.5	.0142	.2209	7:10 p. m.-----	1.99	.0013	.0422				
9:00 a. m.-----	21.1	.0139	.2256	7:20 p. m.-----	2.30	.0015	.0425				
9:20 a. m.-----	20.3	.0134	.2301	7:40 p. m.-----	2.61	.0017	.0430				
9:40 a. m.-----	19.7	.0130	.2345	8:00 p. m.-----	3.06	.0020	.0436				
10:00 a. m.-----	18.8	.0124	.2387	8:20 p. m.-----	3.52	.0023	.0443				
10:20 a. m.-----	18.5	.0122	.2428	8:40 p. m.-----	3.83	.0025	.0451				
10:40 a. m.-----	18.0	.0119	.2468	9:00 p. m.-----	3.98	.0026	.0459				
11:00 a. m.-----	17.5	.0116	.2507	9:20 p. m.-----	3.98	.0026	.0468				
11:20 a. m.-----	17.1	.0113	.2545	9:40 p. m.-----	3.98	.0026	.0477				
11:40 a. m.-----	16.6	.0110	.2582	10:00 p. m.-----	4.29	.0028	.0486				
12:00 m.-----	16.2	.0107	.2618	10:20 p. m.-----	4.59	.0030	.0496				
12:20 p. m.-----	15.7	.0104	.2653	10:40 p. m.-----	4.90	.0032	.0506				
12:40 p. m.-----	15.4	.0102	.2687	10:50 p. m.-----	5.05	.0033	.0511				
1:00 p. m.-----	15.4	.0102	.2721	11:00 p. m.-----	5.51	.0036	.0517				
1:20 p. m.-----	15.1	.0100	.2755	11:20 p. m.-----	6.12	.0040	.0530				
1:40 p. m.-----	15.1	.0100	.2788	11:40 p. m.-----	6.28	.0041	.0543				
2:00 p. m.-----	14.7	.0097	.2821	11:50 p. m.-----	6.28	.0041	.0550				
3:00 p. m.-----	13.5	.0089	.2914	12:00 p. m.-----	6.69	.0044	.0557				
4:00 p. m.-----	12.8	.0085	.3001	June 19:							
5:00 p. m.-----	12.1	.0080	.3083	12:20 a. m.-----	7.71	.0051	.0573				
6:00 p. m.-----	11.4	.0075	.3161	12:30 a. m.-----	8.88	.0058	.0582				
7:00 p. m.-----	10.8	.0071	.3234	12:40 a. m.-----	12.3	.0080	.0594				
8:00 p. m.-----	10.2	.0067	.3303	12:45 a. m.-----	15.3	.0100	.0601				
9:00 p. m.-----	9.56	.0063	.3368	12:50 a. m.-----	17.8	.0116	.0610				
12:00 p. m.-----	8.48	.0056	.3548	1:00 a. m.-----	22.2	.0145	.0632				
Feb. 16:				1:10 a. m.-----	30.2	.0197	.0661				
3:00 a. m.-----	7.20	.0048	.3704	1:20 a. m.-----	34.4	.0225	.0696				
3:20 a. m.-----	5.41	.0036	.3718	1:30 a. m.-----	38.0	.0248	.0735				
8:40 a. m.-----	5.41	.0036	.3910	1:40 a. m.-----	38.6	.0255	.0777				
10:00 a. m.-----	6.69	.0044	.3963	1:47 a. m.-----	38.4	.0252	.0807				
11:00 a. m.-----	7.71	.0051	.4011	2:00 a. m.-----	34.4	.0225	.0859				
12:00 m.-----	6.69	.0044	.4059	2:14 a. m.-----	30.6	.0200	.0908				
5:00 p. m.-----	6.04	.0040	.4269	2:20 a. m.-----	29.7	.0194	.0928				
10:00 p. m.-----	5.23	.0035	.4459	2:40 a. m.-----	26.6	.0174	.0989				
12:00 p. m.-----	5.23	.0035	.4529	2:50 a. m.-----	23.7	.0155	.1016				
				3:00 a. m.-----	21.8	.0142	.1041				

¹ Observed flow without corrections for base flow.² Rain began.

TABLE 64.—Run-off from watershed 94 for selected storms, 1939—Continued

STORM OF JULY 8, TOTAL RAINFALL 1.32 INCHES—Continued				STORM OF OCTOBER 25-27, TOTAL RAINFALL 3.73 INCHES—Continued				STORM OF OCTOBER 25-27, TOTAL RAINFALL 3.73 INCHES—Continued			
Date and time	Discharge	Accumulated run-off		Date and time	Discharge	Accumulated run-off		Date and time	Discharge	Accumulated run-off	
July 8—Con.	Sec.-ft.	In. per hr.	In.	Oct. 25—Con.	Sec.-ft.	In. per hr.	In.	Oct. 26—Con.	Sec.-ft.	In. per hr.	In.
12:45 p. m.	1.04	0.0007	0.0091	6:00 p. m.	1.60	0.0010	0.0012	1:00 p. m.	1.46	0.0010	0.0378
12:50 p. m.	1.34	0.0009	0.0092	6:20 p. m.	1.76	0.0012	0.0016	1:20 p. m.	1.33	0.0009	0.0381
12:55 p. m.	1.86	0.0012	0.0093	6:40 p. m.	1.85	0.0012	0.0020	1:40 p. m. ³	1.21	0.0008	0.0384
12:57 p. m.	2.43	0.0016	0.0093	7:00 p. m.	1.85	0.0012	0.0024	2:30 p. m.	.947	0.0006	0.0390
12:59 p. m.	3.18	0.0021	0.0094	7:20 p. m.	1.85	0.0012	0.0028	3:40 p. m.	.770	0.0005	0.0397
1:00 p. m.	4.73	0.0031	0.0094	7:40 p. m.	1.76	0.0012	0.0032	4:20 p. m.	.736	0.0005	0.0400
1:01 p. m.	6.75	0.0044	0.0095	8:00 p. m.	1.68	0.0011	0.0036	5:30 p. m.	.633	0.0004	0.0405
1:02 p. m.	9.35	0.0061	0.0096	8:20 p. m.	1.46	0.0010	0.0039	6:10 p. m.	.574	0.0004	0.0408
1:05 p. m.	14.5	0.0094	0.0100	8:40 p. m.	1.33	0.0009	0.0042	7:00 p. m.	.523	0.0003	0.0411
1:10 p. m.	24.0	0.0158	0.0110	9:00 p. m.	1.15	0.0008	0.0045	8:00 p. m.	.473	0.0003	0.0414
1:15 p. m.	31.2	0.0204	0.0125	9:20 p. m.	1.04	0.0007	0.0048	9:10 p. m.	.429	0.0003	0.0418
1:20 p. m.	42.1	0.0275	0.0145	9:40 p. m.	.991	0.0006	0.0050	10:20 p. m.	.383	0.0002	0.0420
1:25 p. m.	57.4	0.0393	0.0173	10:00 p. m.	.947	0.0006	0.0052	11:40 p. m.	.341	0.0002	0.0423
1:36 p. m.	60.6	0.0420	0.0248	10:20 p. m.	.858	0.0006	0.0054	12:00 p. m.	.341	0.0002	0.0424
1:40 p. m.	58.1	0.0398	0.0275	10:30 p. m.	.858	0.0006	0.0055				
2:00 p. m.	42.0	0.0275	0.0387	10:40 p. m.	.947	0.0006	0.0056	Oct. 27:			
2:20 p. m. ³	31.8	0.0208	0.0468	10:50 p. m.	1.26	0.0008	0.0057	1:30 a. m.	.304	0.0002	0.0427
2:40 p. m.	23.6	0.0155	0.0528	11:00 p. m.	1.60	0.0010	0.0059	3:20 a. m.	.267	0.0002	0.0431
3:00 p. m.	19.0	0.0124	0.0575	11:15 p. m.	1.46	0.0010	0.0061	3:50 a. m. ²	.251	0.0002	0.0432
3:20 p. m.	15.9	0.0104	0.0613	11:20 p. m.	1.46	0.0010	0.0062	4:00 a. m.	.267	0.0002	0.0432
3:40 p. m.	13.0	0.0085	0.0644	11:40 p. m.	1.85	0.0012	0.0066	4:20 a. m.	.286	0.0002	0.0433
4:00 p. m.	9.9	0.0067	0.0670	11:50 p. m.	2.31	0.0015	0.0068	4:30 a. m.	.304	0.0002	
4:30 p. m.	8.3	0.0054	0.0700	12:00 p. m.	2.41	0.0016	0.0071	4:40 a. m.	.383	0.0002	
5:00 p. m.	6.75	0.0044	0.0725					4:50 a. m.	.498	0.0003	
6:00 p. m.	5.11	0.0033	0.0739	Oct. 26:				4:55 a. m.	.633	0.0004	
7:00 p. m.	4.23	0.0028	0.0770	12:05 a. m.	2.52	0.0016	0.0072	5:00 a. m.	.903	0.0006	
8:00 p. m.	3.61	0.0024	0.0796	12:20 a. m.	2.64	0.0017	0.0076	5:03 a. m.	1.21	0.0008	
9:00 p. m.	2.92	0.0019	0.0817	12:40 a. m.	3.02	0.0020	0.0082	5:08 a. m.	1.60	0.0010	0.0434
12:00 p. m.	2.34	0.0015	0.0869	1:00 a. m.	2.41	0.0016	0.0088	5:15 a. m.	2.01	0.0013	0.0435
July 9:				1:20 a. m.	2.01	0.0013	0.0093	5:20 a. m.	2.31	0.0015	0.0436
3:00 a. m.	1.87	0.0012	0.0910	1:30 a. m.	1.93	0.0013	0.0095	5:30 a. m.	2.89	0.0019	0.0439
6:00 a. m.	1.62	0.0011	0.0953	1:40 a. m.	2.01	0.0013	0.0097	5:40 a. m.	3.71	0.0024	0.0443
9:00 a. m.	1.48	0.0010	0.0983	2:00 a. m.	1.85	0.0012	0.0101	5:44 a. m.	5.23	0.0034	0.0445
12:00 m.	1.27	0.0008	0.1010	2:20 a. m.	1.85	0.0012	0.0105	5:52 a. m.	6.95	0.0045	0.0450
3:00 p. m.	1.05	0.0007	0.1033	2:40 a. m.	1.68	0.0011	0.0109	6:00 a. m.	6.25	0.0040	0.0456
6:00 p. m.	.912	0.0006	0.1052	2:50 a. m.	1.60	0.0010	0.0111	6:13 a. m.	5.41	0.0035	0.0464
12:00 p. m.	.89	0.0006	0.1088	3:00 a. m.	1.60	0.0010	0.0113	6:20 a. m.	5.82	0.0038	0.0468
				3:10 a. m.	1.68	0.0011	0.0115	6:30 a. m.	7.46	0.0048	0.0475
				3:20 a. m.	1.68	0.0011	0.0117	6:35 a. m.	7.46	0.0048	0.0479
				3:40 a. m.	1.53	0.0010	0.0120	6:40 a. m.	7.20	0.0047	0.0483
				4:00 a. m.	1.40	0.0009	0.0123	6:55 a. m.	6.25	0.0040	0.0494
				4:20 a. m.	1.26	0.0008	0.0126	7:00 a. m.	6.25	0.0040	0.0497
				4:40 a. m.	1.15	0.0008	0.0129	7:20 a. m.	5.82	0.0038	0.0510
				5:00 a. m.	1.04	0.0007	0.0132	7:40 a. m.	4.86	0.0032	0.0522
				5:20 a. m.	.947	0.0006	0.0134	7:50 a. m.	4.52	0.0030	0.0527
				5:40 a. m.	.903	0.0006	0.0136	8:00 a. m.	4.52	0.0030	0.0532
				6:00 a. m.	.814	0.0005	0.0138	8:20 a. m.	5.82	0.0038	0.0543
				6:20 a. m.	.770	0.0005	0.0140	8:40 a. m.	6.04	0.0039	0.0556
				6:40 a. m.	.702	0.0004	0.0141	9:00 a. m.	5.82	0.0038	0.0569
				7:00 a. m.	.667	0.0004	0.0142	9:20 a. m.	6.04	0.0039	0.0582
				7:20 a. m.	.633	0.0004	0.0143	9:40 a. m.	6.69	0.0043	0.0596
				7:40 a. m.	.599	0.0004	0.0144	10:00 a. m.	7.46	0.0048	0.0611
				8:00 a. m.	.574	0.0004	0.0145	10:05 a. m.	7.46	0.0048	0.0615
				8:20 a. m.	.549	0.0004	0.0146	10:20 a. m.	8.98	0.0058	0.0628
				8:27 a. m.	.549	0.0004		10:25 a. m.	8.98	0.0058	0.0633
				8:31 a. m.	.667	0.0004		10:40 a. m.	8.22	0.0053	0.0647
				8:33 a. m.	.814	0.0005		11:00 a. m.	7.20	0.0047	0.0664
				8:35 a. m.	1.10	0.0007		11:10 a. m.	6.95	0.0045	0.0672
				8:37 a. m.	1.46	0.0010		11:20 a. m.	6.95	0.0045	0.0680
				8:39 a. m.	1.93	0.0013		11:40 a. m.	6.04	0.0039	0.0694
				8:40 a. m.	2.64	0.0017		12:00 m.	5.60	0.0036	0.0707
				8:41 a. m.	4.68	0.0030		12:20 p. m.	4.86	0.0032	0.0718
				8:42 a. m.	7.46	0.0048	.0147	12:40 p. m.	4.35	0.0028	0.0728
				8:43 a. m.	12.1	0.0079	.0148	1:00 p. m.	4.02	0.0026	0.0737
				8:45 a. m.	16.6	0.0108	.0151	1:20 p. m.	3.86	0.0025	0.0746
				8:47 a. m.	17.1	0.0112	.0155	1:25 p. m.	3.71	0.0024	0.0748
				8:55 a. m.	17.1	0.0112	.0170	1:40 p. m.	3.86	0.0025	0.0754
				9:00 a. m.	18.0	0.0118	.0180	1:45 p. m.	3.86	0.0025	0.0756
				9:03 a. m.	20.6	0.0135	.0186	2:00 p. m.	3.71	0.0024	0.0762
				9:05 a. m.	27.8	0.0182	.0191	2:20 p. m.	3.57	0.0023	0.0770
				9:08 a. m.	33.5	0.0219	.0201	2:40 p. m.	3.28	0.0021	0.0777
				9:10 a. m.	33.5	0.0219	.0208	3:00 p. m.	3.42	0.0022	0.0784
				9:15 a. m.	29.8	0.0195	.0225	3:20 p. m.	3.28	0.0021	0.0791
				9:20 a. m.	25.3	0.0165	.0240	3:40 p. m.	3.28	0.0021	0.0798
				9:25 a. m.	21.1	0.0138	.0253	4:00 p. m.	3.28	0.0021	0.0805
				9:30 a. m.	17.1	0.0112	.0263	4:20 p. m.	3.14	0.0020	0.0812
				9:35 a. m.	15.1	0.0099	.0272	4:40 p. m.	2.77	0.0018	0.0818
				9:40 a. m.	12.8	0.0084	.0280	5:00 p. m.	2.64	0.0017	0.0824
				9:50 a. m.	10.8	0.0071	.0293	5:20 p. m.	2.52	0.0016	0.0829
				10:00 a. m.	10.2	0.0067	.0305	5:40 p. m.	2.41	0.0016	0.0834
				10:10 a. m.	8.98	0.0058	.0315	6:00 p. m.	2.21	0.0014	0.0839
				10:20 a. m.	7.71	0.0050	.0324	6:20 p. m.	2.11	0.0014	0.0844
				10:40 a. m.	5.60	0.0036	.0338	6:40 p. m.	2.01	0.0013	0.0849
				11:00 a. m.	4.02	0.0026	.0348	7:00 p. m.	2.01	0.0013	0.0853
				11:20 a. m.	3.14	0.0020	.0356	7:20 p. m.	1.93	0.0013	0.0857
				11:40 a. m.	2.52	0.0016	.0362	7:40 p. m.	1.85	0.0012	0.0861
				12:00 m.	2.11	0.0014	.0367	8:00 p. m. ³	1.76	0.0012	0.0865
				12:20 p. m.	1.85	0.0012	.0371	9:00 p. m.	1.53	0.0010	0.0876
				12:40 p. m.	1.60	0.0010	.0375	10:00 p. m.	1.33	0.0009	0.0886

² Rain began.³ Rain ended.

TABLE 64.—Run-off from watershed 94 for selected storms, 1939—Continued

Date and time	Discharge	Accumulated run-off	Date and time	Discharge	Accumulated run-off	Date and time	Discharge	Accumulated run-off			
STORM OF OCTOBER 25-27, TOTAL RAIN-FALL 3.73 INCHES—Continued			STORM OF OCTOBER 25-27, TOTAL RAIN-FALL 3.73 INCHES—Continued			STORM OF OCTOBER 25-27, TOTAL RAIN-FALL 3.73 INCHES—Continued					
Oct. 27—Con.	Sec.-ft.	In. per hr.	In.	Oct. 28—Con.	Sec.-ft.	In. per hr.	In.	Oct. 29:	Sec.-ft.	In. per hr.	In.
11:00 p. m.-----	1.15	0.0008	0.0894	10:30 a. m.-----	0.498	0.0003	0.0951	2:20 a. m.-----	0.267	0.0002	0.0986
12:00 p. m.-----	1.04	.0007	.0902	12:00 m.-----	.450	.0003	.0955	4:30 a. m.-----	.251	.0002	.0990
Oct. 28:				2:00 p. m.-----	.405	.0003	.0961	6:30 a. m.-----	.235	.0001	.0993
1:20 a. m.-----	.903	.0006	.0910	3:00 p. m.-----	.383	.0002	.0963	8:30 a. m.-----	.219	.0001	.0996
2:30 a. m.-----	.814	.0005	.0917	4:30 p. m.-----	.360	.0002	.0966	11:00 a. m.-----	.204	.0001	.0999
4:00 a. m.-----	.736	.0005	.0925	6:30 p. m.-----	.341	.0002	.0970	3:00 p. m.-----	.190	.0001	.1004
5:10 a. m.-----	.667	.0004	.0930	8:00 p. m.-----	.323	.0002	.0973	7:00 p. m.-----	.177	.0001	.1009
6:30 a. m.-----	.599	.0004	.0935	10:00 p. m.-----	.304	.0002	.0977	12:00 p. m.-----	.164	.0001	.1015
8:30 a. m.-----	.549	.0004	.0943	12:00 p. m.-----	.286	.0002	.0981				

TABLE 65.—Run-off from watershed 95 for selected storms, 1939

[Area 2,569 acres; rainfall measured at recording rain gages 1, 7, 8, 14, 27]

Date and time				Discharge ¹				Accumulated run-off			
STORM OF FEB. 14-15, TOTAL RAINFALL 1.37 INCHES				STORM OF FEB. 14-15, TOTAL RAINFALL 1.37 INCHES—Continued				STORM JUNE 18-19, TOTAL RAINFALL 3.04 INCHES—Continued			
Feb. 14:				Feb. 15—Con.				June 18—Con.			
	Sec.-ft.	In. per hr.	In.		Sec.-ft.	In. per hr.	In.		Sec.-ft.	In. per hr.	In.
8:20 p. m.-----	5.37	0.0021	0	1:40 p. m.-----	27.7	0.0107	0.2830	12:20 p. m.-----	12.2	0.0047	0.0026
8:40 p. m.-----	5.37	.0021	.0007	2:00 p. m.-----	27.2	.0105	.2865	12:30 p. m.-----	15.7	.0061	.0035
9:00 p. m.-----	5.37	.0021	.0014	3:00 p. m.-----	25.8	.0100	.2967	12:40 p. m.-----	19.1	.0074	.0046
9:20 p. m.-----	5.56	.0021	.0021	4:00 p. m.-----	24.4	.0094	.3064	12:50 p. m.-----	23.0	.0089	.0060
9:40 p. m.-----	5.56	.0021	.0028	5:00 p. m.-----	23.5	.0091	.3156	1:00 p. m.-----	25.8	.0100	.0076
10:00 p. m.-----	5.76	.0022	.0035	6:00 p. m.-----	22.1	.0085	.3244	1:20 p. m.-----	29.3	.0113	.0112
10:20 p. m.-----	5.76	.0022	.0042	7:00 p. m.-----	21.3	.0082	.3328	1:40 p. m.-----	29.8	.0115	.0150
10:40 p. m.-----	5.96	.0023	.0050	8:00 p. m.-----	20.0	.0077	.3408	2:00 p. m.-----	28.7	.0111	.0188
11:00 p. m.-----	6.17	.0024	.0058	9:00 p. m.-----	19.1	.0074	.3483	2:20 p. m.-----	26.3	.0102	.0223
11:20 p. m.-----	6.39	.0025	.0066	10:00 p. m.-----	18.3	.0071	.3555	2:40 p. m.-----	23.9	.0092	.0255
11:40 p. m.-----	6.61	.0025	.0074	11:00 p. m.-----	17.5	.0068	.3624	3:00 p. m.-----	20.4	.0079	.0284
12:00 p. m.-----	7.30	.0028	.0083	12:00 p. m.-----	16.8	.0065	.3690	3:20 p. m.-----	17.2	.0066	.0308
Feb. 15:				Feb. 16:				June 18—Con.			
12:20 a. m.-----	8.03	.0031	.0093	1:00 a. m.-----	16.0	.0062	.3753	3:40 p. m.-----	14.9	.0058	.0329
12:40 a. m.-----	8.80	.0034	.0104	2:00 a. m.-----	15.3	.0059	.3813	4:00 p. m.-----	12.9	.0050	.0347
1:00 a. m.-----	10.1	.0039	.0116	3:00 a. m.-----	14.5	.0056	.3871	4:20 p. m.-----	11.0	.0042	.0362
1:20 a. m.-----	11.9	.0046	.0130	4:00 a. m.-----	13.8	.0053	.3926	4:40 p. m.-----	9.60	.0037	.0375
1:40 a. m.-----	15.7	.0061	.0148	5:00 a. m.-----	12.5	.0048	.3977	5:00 p. m.-----	8.54	.0033	.0387
1:50 a. m.-----	19.6	.0076	.0159	5:30 a. m.-----	12.5	.0048	.4001	5:20 p. m.-----	7.54	.0029	.0397
2:00 a. m.-----	23.9	.0092	.0173	6:00 a. m.-----	11.9	.0046	.4024	5:40 p. m.-----	6.61	.0026	.0406
2:10 a. m.-----	31.9	.0119	.0191	7:00 a. m.-----	11.0	.0042	.4068	6:00 p. m.-----	6.17	.0024	.0414
2:15 a. m.-----	38.9	.0150	.0202	8:00 a. m.-----	10.7	.0041	.4110	6:20 p. m.-----	5.76	.0022	.0422
2:20 a. m.-----	43.4	.0167	.0215	9:00 a. m.-----	10.4	.0040	.4151	6:40 p. m.-----	5.37	.0021	.0429
2:25 a. m.-----	49.6	.0191	.0230	10:00 a. m.-----	11.6	.0045	.4193	7:00 p. m.-----	5.18	.0020	.0436
2:30 a. m.-----	57.9	.0223	.0247	10:20 a. m.-----	13.5	.0052	.4209	7:20 p. m.-----	5.00	.0019	.0443
2:35 a. m.-----	67.0	.0259	.0267	11:00 a. m.-----	13.5	.0052	.4244	7:40 p. m.-----	5.18	.0020	.0450
2:40 a. m.-----	73.3	.0283	.0290	11:50 a. m.-----	14.9	.0057	.4290	8:00 p. m.-----	5.37	.0021	.0457
2:45 a. m.-----	84.0	.0324	.0315	12:30 p. m.-----	12.9	.0050	.4326	8:20 p. m.-----	5.76	.0022	.0464
2:50 a. m.-----	96.8	.0373	.0344	1:00 p. m.-----	12.5	.0048	.4351	8:40 p. m.-----	6.84	.0026	.0472
3:00 a. m.-----	115	.0444	.0412	8:00 p. m.-----	10.7	.0041	.4664	9:00 p. m.-----	7.78	.0030	.0481
3:10 a. m.-----	138	.0532	.0493	12:00 p. m.-----	9.87	.0038	.4823	9:20 p. m.-----	8.54	.0033	.0491
3:20 a. m.-----	156	.0600	.0587	STORM JUNE 18-19, TOTAL RAINFALL 3.04 INCHES				9:40 p. m.-----	8.80	.0034	.0502
3:30 a. m.-----	174	.0671	.0693					10:00 p. m.-----	8.80	.0034	.0513
3:40 a. m.-----	180	.0695	.0807					10:20 p. m.-----	9.06	.0035	.0524
4:00 a. m.-----	150	.0579	.1019					10:40 p. m.-----	9.06	.0035	.0535
4:10 a. m.-----	130	.0502	.1109					11:00 p. m.-----	9.33	.0036	.0547
4:20 a. m.-----	115	.0444	.1184					11:20 p. m.-----	9.87	.0038	.0559
4:30 a. m.-----	99.0	.0382	.1153					11:40 p. m.-----	10.4	.0040	.0572
4:40 a. m.-----	90.2	.0348	.1214					12:00 p. m.-----	11.9	.0046	.0586
5:00 a. m.-----	76.1	.0294	.1321					June 19:			
5:20 a. m.-----	68.7	.0265	.1514					12:20 a. m.-----	12.9	.0050	.0602
5:40 a. m.-----	61.9	.0239	.1598					12:40 a. m.-----	14.5	.0056	.0620
6:00 a. m.-----	58.7	.0227	.1676					1:00 a. m.-----	17.2	.0066	.0640
6:20 a. m.-----	55.6	.0215	.1750					1:10 a. m.-----	20.4	.0079	.0652
6:40 a. m.-----	53.2	.0205	.1820					1:15 a. m.-----	23.5	.0091	.0659
7:00 a. m.-----	51.0	.0197	.1887					1:20 a. m.-----	26.7	.0103	.0667
7:20 a. m.-----	49.6	.0191	.1952					1:25 a. m.-----	30.9	.0119	.0676
7:40 a. m.-----	46.8	.0181	.2015					1:30 a. m.-----	34.8	.0134	.0687
8:00 a. m.-----	45.4	.0175	.2073					1:35 a. m.-----	40.8	.0158	.0699
8:20 a. m.-----	43.4	.0167	.2131					1:40 a. m.-----	45.4	.0175	.0713
8:40 a. m.-----	41.4	.0160	.2186					1:50 a. m.-----	52.5	.0203	.0745
9:00 a. m.-----	40.1	.0155	.2238					2:00 a. m.-----	59.5	.0230	.0781
9:20 a. m.-----	38.3	.0148	.2288					2:10 a. m.-----	61.1	.0236	.0820
9:40 a. m.-----	37.1	.0143	.2337					2:20 a. m.-----	58.7	.0227	.0859
10:00 a. m.-----	35.9	.0139	.2384					2:40 a. m.-----	51.0	.0197	.0930
10:20 a. m.-----	34.8	.0134	.2429					3:00 a. m.-----	44.7	.0173	.0992
10:40 a. m.-----	33.6	.0130	.2473					3:20 a. m.-----	39.5	.0152	.1046
11:00 a. m.-----	33.0	.0127	.2516					3:40 a. m.-----	35.3	.0136	.1094
11:20 a. m.-----	31.9	.0123	.2558					4:00 a. m.-----	33.0	.0127	.1138
11:40 a. m.-----	31.4	.0121	.2599					4:20 a. m.-----	34.8	.0134	.1182
12:00 p. m.-----	30.9	.0119	.2640					4:40 a. m.-----	39.5	.0152	.1230
12:20 p. m.-----	29.8	.0115	.2679					5:00 a. m.-----	44.7	.0173	.1284
12:40 p. m.-----	29.3	.0113	.2717					5:20 a. m.-----	45.4	.0175	.1342
1:00 p. m.-----	28.7	.0111	.2754					5:40 a. m.-----	44.0	.0170	.1400
1:20 p. m.-----	28.2	.0109	.2791					6:00 a. m.-----	41.4	.0160	.1455
								6:20 a. m.-----	38.3	.0148	.1506

¹ Observed flow without corrections for base flow.

TABLE 65.—Run-off from watershed 95 for selected storms, 1939—Continued

Date and time	Discharge	Accumulated run-off	Date and time	Discharge	Accumulated run-off	Date and time	Discharge	Accumulated run-off
STORM JUNE 18-19, TOTAL RAINFALL 3.04 INCHES—Continued			STORM OF JULY 8, TOTAL RAINFALL 1.59 INCHES—Continued			STORM OF OCT. 25-27, TOTAL RAINFALL 3.90 INCHES—Continued		
June 19—Con.	Sec.-ft.	In. per hr.	July 8—Con.	Sec.-ft.	In. per hr.	Oct. 26—Con.	Sec.-ft.	In. per hr.
6:40 a. m.	34.8	0.0134	3:32 p. m.	38.9	0.0150	9:57 a. m.	52.5	0.0223
7:00 a. m.	30.9	.0119	4:00 p. m.	30.9	.0119	10:00 a. m.	49.6	.0210
7:20 a. m.	28.2	.0109	4:40 p. m.	23.5	.0091	10:05 a. m.	44.7	.0187
7:40 a. m.	25.8	.0100	5:00 p. m.	20.8	.0080	10:10 a. m.	40.1	.0166
8:00 a. m.	23.9	.0092	6:00 p. m.	16.0	.0062	10:13 a. m.	36.5	.0149
8:20 a. m.	22.5	.0087	7:00 p. m.	12.9	.0050	10:20 a. m.	31.9	.0128
8:40 a. m.	21.3	.0082	8:00 p. m.	11.0	.0042	10:25 a. m.	29.3	.0116
8:50 a. m.	20.8	.0080	9:00 p. m.	9.60	.0037	10:30 a. m.	26.3	.0102
9:00 a. m.	20.4	.0079	10:00 p. m.	8.80	.0034	10:40 a. m.	23.0	.0087
10:00 a. m.	18.3	.0071	11:00 p. m.	7.78	.0030	10:45 a. m.	20.8	.0078
11:00 a. m.	16.0	.0062	12:00 p. m.	7.30	.0028	10:55 a. m.	18.7	.0069
12:00 m.	13.8	.0053	July 9:			11:00 a. m.	17.2	.0063
1:00 p. m.	12.2	.0047	1:00 a. m.	5.76	.0022	11:10 a. m.	15.3	.0055
2:00 p. m.	10.7	.0041	8:00 a. m.	4.82	.0019	11:20 a. m.	13.5	.0049
3:00 p. m.	9.60	.0037	12:00 m.	3.86	.0015	11:30 a. m.	11.6	.0041
4:00 p. m.	8.80	.0034	3:30 p. m.	3.06	.0012	11:40 a. m.	10.4	.0037
5:00 p. m.	7.78	.0030	7:00 p. m.	2.61	.0010	11:50 a. m.	9.33	.0033
6:00 p. m.	7.07	.0027	12:00 p. m.	2.50	.0010	12:00 m.	8.28	.0029
7:00 p. m.	6.39	.0025				12:10 p. m.	7.54	.0027
8:00 p. m.	5.96	.0023	STORM OF OCT. 25-27, TOTAL RAINFALL 3.90 INCHES			12:20 p. m.	6.84	.0024
9:00 p. m.	5.56	.0021	Oct. 25:			12:30 p. m.	6.39	.0022
10:00 p. m.	5.37	.0021	12:20 a. m. ¹			12:40 p. m.	5.96	.0021
11:00 p. m.	5.00	.0019	8:00 p. m. ⁴	5.18	0.0019	1:00 p. m.	5.18	.0019
12:00 p. m.	4.82	.0019	8:20 p. m.	4.82	.0017	1:20 p. m.	4.48	.0016
June 20:			8:40 p. m.	4.48	.0016	1:40 p. m. ³	4.01	.0015
3:00 a. m.	4.16	.0016	9:00 p. m.	4.16	.0015	2:00 p. m.	3.58	.0013
9:00 a. m.	3.58	.0014	9:20 p. m.	3.72	.0014	2:20 p. m.	3.18	.0012
12:00 m.	3.18	.0012	9:40 p. m.	3.44	.0013	2:40 p. m.	2.83	.0011
3:00 p. m.	2.61	.0010	10:00 p. m.	3.18	.0012	3:00 p. m.	2.61	.0010
7:00 p. m.	2.20	.0008	10:20 p. m.	2.72	.0010	3:30 p. m.	2.40	.0009
12:00 p. m.	2.10	.0008	10:40 p. m.	2.50	.0009	4:00 p. m.	2.20	.0008
STORM OF JULY 8, TOTAL RAINFALL 1.59 INCHES			10:50 p. m.	2.61	.0010	4:30 p. m.	2.01	.0008
July 8:			11:00 p. m.	2.50	.0009	5:00 p. m.	1.85	.0007
5:04 a. m. ²	0.991	0.0004	11:20 p. m.	2.40	.0009	6:00 p. m.	1.60	.0006
6:58 a. m.	1.04	.0004	11:40 p. m.	2.50	.0009	7:00 p. m.	1.40	.0005
7:00 a. m.	1.26	.0005	12:00 p. m.	2.61	.0010	7:40 p. m.	1.26	.0005
7:05 a. m.	1.93	.0007	Oct. 26:			9:00 p. m.	1.10	.0004
7:20 a. m.	2.20	.0008	12:20 a. m.	3.31	.0012	10:10 p. m.	.991	.0004
7:27 a. m.	2.40	.0009	12:30 a. m.	3.44	.0013	11:00 p. m.	.947	.0004
7:36 a. m.	2.30	.0009	12:40 a. m.	4.01	.0015	12:00 p. m.	.903	.0003
7:40 a. m.	2.50	.0010	12:50 a. m.	4.32	.0016	Oct. 27:		
7:46 a. m.	3.06	.0012	1:00 a. m.	4.48	.0016	12:30 a. m.	.903	.0003
8:00 a. m.	4.48	.0017	1:20 a. m.	4.82	.0017	2:00 a. m.	.858	.0003
8:10 a. m.	5.76	.0022	1:40 a. m.	5.00	.0018	3:00 a. m.	.814	.0003
8:20 a. m.	6.61	.0026	1:50 a. m.	5.18	.0019	3:30 a. m. ²	.814	.0003
8:30 a. m.	6.84	.0026	2:00 a. m.	5.00	.0018	4:00 a. m.	.814	.0003
8:35 a. m.	9.87	.0038	2:20 a. m.	4.32	.0016	4:30 a. m.	.770	.0003
8:40 a. m.	13.8	.0053	2:40 a. m.	3.72	.0014	4:40 a. m.	.770	.0003
8:45 a. m.	18.7	.0072	3:00 a. m.	3.58	.0010	4:50 a. m.	.770	.0003
8:50 a. m.	24.9	.0096	3:20 a. m.	3.44	.0013	5:00 a. m.	.814	.0003
8:55 a. m.	33.0	.0127	3:40 a. m.	3.31	.0012	5:10 a. m.	.947	.0004
9:00 a. m.	38.9	.0150	4:00 a. m.	3.18	.0012	5:20 a. m.	1.21	.0005
9:12 a. m.	46.1	.0178	4:20 a. m.	3.06	.0011	5:30 a. m.	1.46	.0006
9:20 a. m.	42.1	.0162	4:40 a. m.	2.83	.0011	5:35 a. m.	1.68	.0006
9:25 a. m.	38.9	.0150	5:00 a. m.	2.61	.0010	5:40 a. m.	1.85	.0007
9:40 a. m.	29.3	.0113	5:20 a. m.	2.50	.0009	5:45 a. m.	2.10	.0008
10:00 a. m.	20.8	.0080	5:40 a. m.	2.30	.0009	5:50 a. m.	2.50	.0009
10:20 a. m.	16.0	.0062	6:00 a. m.	2.10	.0008	5:55 a. m.	2.83	.0011
10:40 a. m.	12.9	.0050	6:20 a. m.	2.01	.0008	6:00 a. m.	3.31	.0012
11:00 a. m.	10.4	.0040	6:40 a. m.	1.85	.0007	6:03 a. m.	3.86	.0014
11:20 a. m.	9.06	.0035	7:00 a. m.	1.76	.0007	6:05 a. m.	4.48	.0016
11:40 a. m.	7.78	.0030	7:20 a. m.	1.60	.0006	6:07 a. m.	5.18	.0019
12:00 m.	7.07	.0027	7:40 a. m.	1.46	.0006	6:09 a. m.	5.96	.0021
12:20 p. m.	6.39	.0025	8:00 a. m.	1.40	.0005	6:11 a. m.	7.07	.0025
12:40 p. m.	6.17	.0024	8:20 a. m.	1.33	.0005	6:14 a. m.	8.28	.0029
12:44 p. m.	6.17	.0024	8:37 a. m.	1.26	.0005	6:16 a. m.	9.60	.0034
1:00 p. m.	9.06	.0035	8:40 a. m.	1.46	.0006	6:19 a. m.	11.0	.0039
1:10 p. m.	11.9	.0046	8:44 a. m.	1.76	.0007	6:20 a. m.	11.6	.0041
1:15 p. m.	16.0	.0062	8:47 a. m.	2.10	.0008	6:25 a. m.	13.5	.0049
1:20 p. m.	20.4	.0079	9:00 a. m.	2.40	.0009	6:30 a. m.	15.3	.0055
1:25 p. m.	27.7	.0107	9:05 a. m.	2.40	.0009	6:40 a. m.	17.2	.0063
1:30 p. m.	38.9	.0150	9:10 a. m.	2.83	.0011	6:45 a. m.	17.5	.0064
1:32 p. m.	52.5	.0203	9:12 a. m.	3.31	.0012	6:50 a. m.	17.5	.0064
1:35 p. m.	74.2	.0286	9:13 a. m.	4.01	.0015	7:00 a. m.	16.4	.0060
1:38 p. m.	104	.0401	9:14 a. m.	5.56	.0020	7:10 a. m.	15.7	.0057
1:40 p. m.	116	.0448	9:15 a. m.	10.4	.0037	7:20 a. m.	15.3	.0055
1:43 p. m.	138	.0533	9:16 a. m.	17.2	.0063	7:40 a. m.	13.5	.0049
1:50 p. m.	167	.0645	9:17 a. m.	20.8	.0078	7:50 a. m.	12.5	.0045
1:56 p. m.	180	.0695	9:18 a. m.	25.3	.0098	8:00 a. m.	11.9	.0042
2:00 p. m.	174	.0672	9:19 a. m.	29.3	.0116	8:30 a. m.	10.7	.0038
2:17 p. m.	144	.0556	9:20 a. m.	31.4	.0126	8:40 a. m.	9.87	.0035
2:20 p. m. ³	127	.0490	9:22 a. m.	34.8	.0141	8:50 a. m.	9.60	.0034
2:30 p. m.	99.0	.0382	9:24 a. m.	38.3	.0158	9:00 a. m.	9.87	.0035
2:40 p. m.	77.0	.0297	9:27 a. m.	42.1	.0175	9:10 a. m.	10.7	.0038
3:00 p. m.	55.6	.0215	9:30 a. m.	45.4	.0190	9:20 a. m.	11.6	.0041
			9:35 a. m.	49.6	.0210	9:40 a. m.	13.2	.0047
			9:40 a. m.	53.2	.0227	9:50 a. m.	13.5	.0049
			9:49 a. m.	56.3	.0240	10:00 a. m.	14.2	.0051
						10:20 a. m.	16.0	.0058
						10:30 a. m.	17.5	.0064
						10:40 a. m.	19.1	.0071

¹ Rain began.⁴ Rain ended.³ No record between 12:20 a. m. and 8:00 p. m.

TABLE 65.—Run-off from watershed 95 for selected storms, 1939—Continued

Date and time		Discharge		Accumulated run-off	Date and time		Discharge		Accumulated run-off	Date and time		Discharge		Accumulated run-off	
STORM OF OCT. 25-27, TOTAL RAINFALL 3.90 INCHES—Continued					STORM OF OCT. 25-27, TOTAL RAINFALL 3.90 INCHES—Continued					STORM OF OCT. 25-27, TOTAL RAINFALL 3.90 INCHES—Continued					
Oct. 27—Con.	Sec.-ft.	In. per hr.	In.	Oct. 27—Con.	Sec.-ft.	In. per hr.	In.	Oct. 28—Con.	Sec.-ft.	In. per hr.	In.	Oct. 28—Con.	Sec.-ft.	In. per hr.	In.
11:00 a. m.-----	20.4	0.0076	0.0837	5:40 p. m.-----	6.17	0.0022	0.1097	1:30 p. m.-----	1.10	0.0004	0.1288	1:30 p. m.-----	1.10	0.0004	0.1288
11:10 a. m.-----	20.4	.0076	.0850	6:00 p. m.-----	5.96	.0021	.1105	3:00 p. m.-----	1.04	.0004	.1294	3:00 p. m.-----	1.04	.0004	.1294
11:20 a. m.-----	20.0	.0074	.0863	6:20 p. m.-----	5.56	.0020	.1112	4:30 p. m.-----	.991	.0004	.1300	4:30 p. m.-----	.991	.0004	.1300
11:40 a. m.-----	17.9	.0066	.0887	6:40 p. m.-----	5.37	.0019	.1119	8:30 p. m.-----	.947	.0004	.1315	8:30 p. m.-----	.947	.0004	.1315
11:50 a. m.-----	16.4	.0060	.0898	7:00 p. m.-----	5.18	.0019	.1126	12:00 p. m.-----	.903	.0003	.1327	12:00 p. m.-----	.903	.0003	.1327
12:00 m.-----	15.7	.0057	.0908	7:20 p. m.-----	4.82	.0017	.1132	Oct. 29:				Oct. 29:			
12:20 p. m.-----	13.8	.0050	.0927	7:40 p. m.-----	4.65	.0017	.1138	2:00 a. m.-----	.858	.0003	.1334	2:00 a. m.-----	.858	.0003	.1334
12:30 p. m.-----	12.9	.0046	.0936	8:00 p. m. ³ -----	4.48	.0016	.1144	5:00 a. m.-----	.814	.0003	.1344	5:00 a. m.-----	.814	.0003	.1344
12:40 p. m.-----	11.9	.0042	.0944	9:00 p. m.-----	3.86	.0014	.1160	7:30 a. m.-----	.770	.0003	.1352	7:30 a. m.-----	.770	.0003	.1352
1:00 p. m.-----	10.7	.0038	.0960	10:00 p. m.-----	3.44	.0013	.1174	9:30 a. m.-----	.736	.0003	.1358	9:30 a. m.-----	.736	.0003	.1358
1:20 p. m.-----	9.60	.0034	.0973	11:00 p. m.-----	3.06	.0011	.1187	12:00 m.-----	.702	.0003	.1365	12:00 m.-----	.702	.0003	.1365
1:40 p. m.-----	8.80	.0031	.0985	12:00 p. m.-----	2.72	.0010	.1198	2:30 p. m.-----	.667	.0003	.1372	2:30 p. m.-----	.667	.0003	.1372
2:00 p. m.-----	8.03	.0028	.0996	Oct. 28:				5:00 p. m.-----	.633	.0002	.1378	5:00 p. m.-----	.633	.0002	.1378
2:20 p. m.-----	8.03	.0028	.1006	1:00 a. m.-----	2.50	.0009	.1208	8:00 p. m.-----	.599	.0002	.1385	8:00 p. m.-----	.599	.0002	.1385
2:40 p. m.-----	7.78	.0027	.1016	2:00 a. m.-----	2.30	.0009	.1217	11:00 p. m.-----	.574	.0002	.1392	11:00 p. m.-----	.574	.0002	.1392
3:00 p. m.-----	7.54	.0027	.1026	3:00 a. m.-----	2.10	.0008	.1225	12:00 p. m.-----	.574	.0002	.1394	12:00 p. m.-----	.574	.0002	.1394
3:40 p. m.-----	7.30	.0026	.1044	4:00 a. m.-----	1.93	.0007	.1233	Oct. 30:				Oct. 30:			
4:00 p. m.-----	7.30	.0026	.1053	5:30 a. m.-----	1.76	.0007	.1244	2:00 a. m.-----	.549	.0002	.1398	2:00 a. m.-----	.549	.0002	.1398
4:20 p. m.-----	7.07	.0025	.1062	7:00 a. m.-----	1.60	.0006	.1254	3:00 p. m.-----	.473	.0002	.1424	3:00 p. m.-----	.473	.0002	.1424
4:40 p. m.-----	6.84	.0024	.1071	8:40 a. m.-----	1.46	.0006	.1263	11:00 p. m.-----	.429	.0002	.1438	11:00 p. m.-----	.429	.0002	.1438
5:00 p. m.-----	6.84	.0024	.1080	10:50 a. m.-----	1.33	.0005	.1275	12:00 p. m.-----	.429	.0002	.1440	12:00 p. m.-----	.429	.0002	.1440
5:20 p. m.-----	6.39	.0022	.1089	12:00 m.-----	1.21	.0005	.1281								

³ Rain ended.

TABLE 66.—Run-off from watershed 97 for selected storms, 1939

[Area 4,581 acres; rainfall measured at recording rain gages 1, 7, 8, 14, 27, 44, 47, 54, 56, Y101, 100, 102]

Date and time		Discharge ¹		Accumulated run-off		Date and time		Discharge ¹		Accumulated run-off							
STORM OF FEB. 14-16, TOTAL RAINFALL 1.33 INCHES						STORM OF FEB. 14-16, TOTAL RAINFALL 1.33 INCHES—Continued						STORM OF JUNE 18-19, TOTAL RAINFALL, 2.90 INCHES—Continued					
Feb. 14:		Sec.-ft.	In. per hr.	In.		Feb. 15—Con.		Sec.-ft.	In. per hr.	In.		June 18—Con.		Sec.-ft.	In. per hr.	In.	
8:20 p. m.-----		7.91	0.0017	0		11:20 a. m.-----		66.7	0.0144	0.2987		8:00 a. m.-----		0.462	0.0001	0	
8:40 p. m.-----		7.91	.0017	.0006		11:40 a. m.-----		65.2	.0141	.3034		8:20 a. m.-----		.462	.0001	.0001	
9:00 p. m.-----		8.18	.0018	.0012		12:00 m.-----		63.7	.0138	.3081		8:40 a. m.-----		.462	.0001		
9:20 p. m.-----		8.18	.0018	.0018		12:20 p. m.-----		62.1	.0134	.3126		9:00 a. m.-----		.462	.0001		
9:40 p. m.-----		8.18	.0018	.0024		12:40 p. m.-----		62.1	.0134	.3171		9:20 a. m.-----		.462	.0001	.0002	
10:00 p. m.-----		8.18	.0018	.0030		1:00 p. m.-----		60.6	.0131	.3215		9:40 a. m.-----		.462	.0001		
10:20 p. m.-----		8.41	.0018	.0036		1:20 p. m.-----		59.0	.0127	.3258		10:00 a. m.-----		.462	.0001		
10:40 p. m.-----		8.64	.0019	.0042		1:40 p. m.-----		57.5	.0124	.3307		10:20 a. m.-----		.462	.0001	.0003	
11:00 p. m.-----		8.88	.0019	.0048		2:00 p. m.-----		55.0	.0119	.3348		10:40 a. m.-----		.924	.0002	.0004	
11:20 p. m.-----		9.12	.0020	.0055		3:00 p. m.-----		52.5	.0113	.3464		11:00 a. m.-----		.924	.0002	.0005	
11:40 p. m.-----		9.36	.0020	.0062		4:00 p. m.-----		49.9	.0108	.3574		11:10 a. m.-----				.0005	
12:00 p. m.-----		10.6	.0023	.0069		5:00 p. m.-----		47.4	.0102	.3679		11:20 a. m.-----		1.39	.0003	.0005	
Feb. 15:						6:00 p. m.-----		44.9	.0097	.3779		11:30 a. m.-----		1.85	.0004	.0006	
12:20 a. m.-----		11.1	.0024	.0077		7:00 p. m.-----		42.8	.0092	.3873		11:35 a. m.-----		3.23	.0007	.0007	
12:40 a. m.-----		12.5	.0027	.0086		8:00 p. m.-----		40.7	.0088	.3963		11:40 a. m.-----		4.16	.0009	.0008	
1:00 a. m.-----		14.3	.0031	.0096		9:00 p. m.-----		38.7	.0084	.4049		11:45 a. m.-----		5.08	.0011	.0009	
1:20 a. m.-----		18.1	.0039	.0108		10:00 p. m.-----		36.6	.0079	.4131		11:50 a. m.-----		5.27	.0014	.0010	
1:40 a. m.-----		25.0	.0054	.0123		11:00 p. m.-----		34.5	.0075	.4208		11:55 a. m.-----		5.31	.0015	.0011	
2:00 a. m.-----		38.7	.0084	.0146		12:00 p. m.-----		32.8	.0071	.4281		12:00 m.-----		9.71	.0021	.0014	
2:10 a. m.-----		49.9	.0108	.0162		Feb. 16:						12:10 p. m.-----		12.5	.0027	.0018	
2:20 a. m.-----		71.4	.0154	.0184		1:00 a. m.-----		32.0	.0069	.4351		12:20 p. m.-----		13.4	.0029	.0023	
2:30 a. m.-----		91.6	.0198	.0213		2:00 a. m.-----		30.4	.0066	.4419		12:30 p. m.-----		14.3	.0031	.0028	
2:40 a. m.-----		122	.0264	.0251		3:00 a. m.-----		28.7	.0062	.4483		12:40 p. m.-----		19.4	.0042	.0034	
3:00 a. m.-----		183	.0395	.0361		4:00 a. m.-----		27.0	.0058	.4543		12:50 p. m.-----		25.4	.0055	.0042	
3:20 a. m.-----		240	.0518	.0513		5:00 a. m.-----		25.5	.0055	.4580		1:00 p. m.-----		29.6	.0064	.0052	
3:30 a. m.-----		260	.0562	.0603		6:00 a. m.-----		24.2	.0052	.4598		1:05 p. m.-----		35.6	.0077	.0075	
3:40 a. m.-----		306	.0661	.0705		7:00 a. m.-----		21.6	.0047	.4648		1:10 p. m.-----		43.9	.0095	.0104	
4:00 a. m.-----		330	.0713	.0934		8:00 a. m.-----		20.9	.0045	.4694		1:15 p. m.-----		48.5	.0105	.0137	
4:10 a. m.-----		326	.0704	.1052		9:00 a. m.-----		20.3	.0044	.4738		1:20 p. m.-----		48.5	.0105	.0155	
4:20 a. m.-----		330	.0713	.1170		10:00 a. m.-----		20.3	.0044	.4782		1:25 p. m.-----		47.2	.0102	.0172	
4:30 a. m.-----		310	.0670	.1285		11:00 a. m.-----		18.1	.0039	.4789		1:30 p. m.-----		44.8	.0097	.0205	
4:40 a. m.-----		260	.0562	.1388		12:00 m.-----		19.6	.0042	.4822		1:35 p. m.-----		41.6	.0090	.0236	
5:00 a. m.-----		217	.0469	.1560		1:00 p. m.-----		23.6	.0051	.4863		1:40 p. m.-----		37.4	.0081	.0265	
5:20 a. m.-----		180	.0389	.1703		2:00 p. m.-----		28.7	.0062	.4924		1:45 p. m.-----		32.8	.0071	.0290	
5:40 a. m.-----		155	.0335	.1824		3:00 p. m.-----		26.2	.0057	.4984		1:50 p. m.-----		29.6	.0064	.0313	
6:00 a. m.-----		137	.0296	.1929		4:00 p. m.-----		22.9	.0050	.5038		1:55 p. m.-----		25.0	.0054	.0333	
6:20 a. m.-----		130	.0281	.2025		5:00 p. m.-----		22.2	.0048	.5087		2:00 p. m.-----		21.7	.0047	.0350	
6:40 a. m.-----		119	.0257	.2115		6:00 p. m.-----		22.2	.0048	.5135		2:05 p. m.-----		18.5	.0040	.0365	
7:00 a. m.-----		112	.0242	.2198		7:00 p. m.-----		20.9	.0045	.5227		2:10 p. m.-----		16.6	.0036	.0378	
7:20 a. m.-----		107	.0231	.2277		8:00 p. m.-----		19.6	.0042	.5315		2:15 p. m.-----		13.9	.0030	.0389	
7:40 a. m.-----		100	.0216	.2352		9:00 p. m.-----		18.6	.0040	.5397		2:20 p. m.-----		12.5	.0027	.0398	
8:00 a. m.-----		93.8	.0203	.2427		10:00 p. m.-----		18.1	.0039	.5477		2:25 p. m.-----		11.1	.0024	.0407	
8:20 a. m.-----		89.6	.0194	.2488		STORM OF JUNE 18-19, TOTAL RAINFALL, 2.90 INCHES						2:30 p. m.-----		10.2	.0022	.0415	
8:40 a. m.-----		87.8	.0190	.2552								2:35 p. m.-----		9.70	.0021	.0422	
9:00 a. m.-----		84.1	.0182	.2614		June 18:						2:40 p. m.-----		9.70	.0021	.0426	
9:20 a. m.-----		80.3	.0173	.2673		7:30 a. m.-----						2:45 p. m.-----		9.70	.0021	.0430	
9:40 a. m.-----		76.6	.0165	.2729		7:40 a. m.-----						2:50 p. m.-----		10.6	.0023	.0437	
10:00 a. m.-----		74.8	.0162	.2784								2:55 p. m.-----		10.6	.0023	.0445	
10:20 a. m.-----		71.4	.0154	.2837								3:00 p. m.-----		11.6	.0025	.0453	
10:40 a. m.-----		69.8	.0151	.2888								3:05 p. m.-----		12.5	.0027	.0462	
11:00 a. m.-----		68.3	.0148	.2938								3:10 p. m.-----		12.5	.0027	.0471	
												3:15 p. m.-----		12.5	.0027	.0480	

¹ Observed flow without corrections for base flow.

TABLE 66.—Run-off from watershed 97 for selected storms, 1939—Continued

Date and time	Discharge	Accumulated run-off	Date and time	Discharge	Accumulated run-off	Date and time	Discharge	Accumulated run-off
STORM OF JUNE 18-19, TOTAL RAINFALL, 2.90 INCHES—Continued			STORM OF JULY 8, TOTAL RAINFALL 1.65 INCHES—Continued			STORM OF OCT. 25-27, TOTAL RAINFALL 3.83 INCHES—Continued		
June 18—Con.	Sec.-ft.	In. per hr.	July 8—Con.	Sec.-ft.	In. per hr.	Oct. 25—Con.	Sec.-ft.	In. per hr.
9:40 p. m.	12.9	0.0028	8:20 a. m.	38.8	0.0084	2:00 p. m.	0.052	T
10:00 p. m.	13.8	0.0030	8:30 a. m.	57.5	0.0124	2:20 p. m.	0.056	T
10:20 p. m.	15.2	0.0033	8:35 a. m.	68.6	0.0148	2:40 p. m.	0.066	T
10:40 p. m.	17.1	0.0037	8:40 a. m.	91.7	0.0198	3:00 p. m.	0.083	T
11:00 p. m.	17.1	0.0037	8:45 a. m.	127	0.0274	3:20 p. m.	0.096	T
11:20 p. m.	17.6	0.0038	9:00 a. m.	173	0.0374	3:40 p. m.	0.104	T
11:40 p. m.	17.6	0.0038	9:08 a. m.	180	0.0389	4:00 p. m.	0.112	T
12:00 p. m.	17.6	0.0038	9:20 a. m.	158	0.0341	4:20 p. m.	0.152	T
June 19:			9:40 a. m.	140	0.0302	4:40 p. m.	0.204	T
12:20 a. m.	18.0	0.0039	10:00 a. m.	117	0.0253	5:00 p. m.	0.267	0.0001
12:40 a. m.	19.4	0.0042	10:20 a. m.	89.8	0.0194	5:10 p. m.	0.329	0.0001
1:00 a. m.	21.7	0.0047	10:40 a. m.	68.5	0.0148	5:15 p. m.	0.396	0.0001
1:20 a. m.	25.0	0.0054	10:55 a. m.	57.4	0.0124	5:20 p. m.	0.500	0.0001
1:40 a. m.	29.6	0.0064	11:00 a. m.	53.7	0.0116	5:25 p. m.	0.620	0.0001
2:00 a. m.	38.8	0.0084	11:20 a. m.	43.9	0.0095	5:35 p. m.	0.850	0.0002
2:20 a. m.	71.1	0.0154	11:40 a. m.	36.6	0.0079	5:40 p. m.	0.994	0.0002
2:30 a. m.	87.8	0.0190	12:00 m.	32.0	0.0069	5:50 p. m.	1.21	0.0003
2:40 a. m.	91.4	0.0198	12:20 p. m.	27.0	0.0058	6:00 p. m.	1.40	0.0003
2:45 a. m.	93.1	0.0203	12:40 p. m.	24.5	0.0053	6:20 p. m.	1.62	0.0004
3:00 a. m.	89.6	0.0194	12:50 p. m.	24.5	0.0053	6:40 p. m.	1.76	0.0004
3:20 a. m.	82.2	0.0178	1:00 p. m.	27.9	0.0060	7:00 p. m.	2.02	0.0004
3:40 a. m.	72.5	0.0157	1:10 p. m.	33.7	0.0073	7:20 p. m.	2.30	0.0005
4:00 a. m.	69.8	0.0151	1:20 p. m.	44.8	0.0097	7:40 p. m.	2.80	0.0006
4:20 a. m.	68.4	0.0148	1:27 p. m.	57.4	0.0124	8:00 p. m.	3.38	0.0004
4:40 a. m.	66.5	0.0144	1:30 p. m.	68.5	0.0148	8:10 p. m.	3.77	0.0008
5:00 a. m.	68.3	0.0148	1:35 p. m.	91.7	0.0198	8:20 p. m.	3.90	0.0008
5:20 a. m.	71.1	0.0154	1:40 p. m.	130	0.0281	8:40 p. m.	3.90	0.0008
5:40 a. m.	74.8	0.0162	1:45 p. m.	170	0.0367	9:00 p. m.	3.77	0.0008
5:50 a. m.	76.2	0.0165	1:50 p. m.	206	0.0445	9:10 p. m.	3.64	0.0008
6:00 a. m.	76.2	0.0165	2:00 p. m.	265	0.0572	9:20 p. m.	3.77	0.0008
6:20 a. m.	72.5	0.0157	2:20 p. m.	298	0.0644	9:30 p. m.	4.50	0.0010
6:40 a. m.	68.4	0.0148	2:40 p. m.	352	0.0760	9:40 p. m.	5.30	0.0011
7:00 a. m.	63.7	0.0138	3:00 p. m.	349	0.0754	9:50 p. m.	5.99	0.0013
7:20 a. m.	57.3	0.0124	3:10 p. m.	285	0.0616	10:00 p. m.	6.54	0.0014
7:40 a. m.	53.6	0.0116	3:20 p. m.	236	0.0510	10:10 p. m.	6.73	0.0015
8:00 a. m.	49.9	0.0108	3:30 p. m.	186	0.0402	10:20 p. m.	6.54	0.0014
8:20 a. m.	47.1	0.0102	3:40 p. m.	158	0.0341	10:40 p. m.	6.35	0.0014
8:40 a. m.	46.2	0.0100	4:00 p. m.	114	0.0246	11:00 p. m.	6.17	0.0013
8:50 a. m.	42.5	0.0092	4:20 p. m.	91.7	0.0198	11:20 p. m.	5.99	0.0013
9:00 a. m.	41.6	0.0090	4:40 p. m.	82.4	0.0178	11:40 p. m.	5.82	0.0013
9:20 a. m.	40.6	0.0088	5:00 p. m.	71.4	0.0154	12:00 p. m.	5.46	0.0012
9:40 a. m.	38.8	0.0084	5:30 p. m.	57.5	0.0124	Oct. 26:		
10:00 a. m.	37.4	0.0081	6:00 p. m.	50.0	0.0108	12:20 a. m.	5.14	0.0011
10:20 a. m.	36.5	0.0079	7:00 p. m.	39.7	0.0086	12:40 a. m.	4.81	0.0010
10:40 a. m.	34.6	0.0075	8:00 p. m.	33.2	0.0072	1:00 a. m.	4.65	0.0010
11:00 a. m.	33.7	0.0073	9:00 p. m.	28.4	0.0061	1:20 a. m.	4.50	0.0010
12:00 m.	29.6	0.0064	11:00 p. m.	21.6	0.0047	1:40 a. m.	4.35	0.0009
1:00 p. m.	25.4	0.0055	12:00 p. m.	19.6	0.0042	2:00 a. m.	4.35	0.0009
2:00 p. m.	22.2	0.0048	July 9:			2:20 a. m.	4.35	0.0009
3:00 p. m.	19.1	0.0041	3:00 a. m.	14.5	0.0031	2:40 a. m.	4.65	0.0010
4:00 p. m.	16.5	0.0036	7:00 a. m.	11.2	0.0024	3:00 a. m.	5.14	0.0011
5:00 p. m.	14.1	0.0030	12:00 m.	8.89	0.0019	3:20 a. m.	5.64	0.0012
6:00 p. m.	12.6	0.0027	4:00 p. m.	7.13	0.0015	3:40 a. m.	5.99	0.0013
7:00 p. m.	11.6	0.0025	5:30 p. m.	5.65	0.0012	4:00 a. m.	6.17	0.0013
8:00 p. m.	10.4	0.0022	12:00 p. m.	5.55	0.0012	4:20 a. m.	5.99	0.0013
9:00 p. m.	9.60	0.0021	STORM OF OCT. 25-27, TOTAL RAINFALL 3.83 INCHES			4:35 a. m.	6.17	0.0013
10:00 p. m.	9.12	0.0020	Oct. 25:			4:40 a. m.	5.99	0.0013
11:00 p. m.	8.64	0.0019	12:17 a. m. ²			5:00 a. m.	5.64	0.0012
12:00 p. m.	8.40	0.0018	12:20 a. m.	0.017	T	5:20 a. m.	5.30	0.0014
June 20:			12:22 a. m.	0.019	T	5:40 a. m.	4.97	0.0011
4:00 a. m.	7.11	0.0015	12:30 a. m.	0.022	T	6:00 a. m.	4.65	0.0010
9:00 a. m.	6.35	0.0014	12:40 a. m.	0.022	T	6:20 a. m.	4.50	0.0010
2:00 p. m.	5.46	0.0012	1:00 a. m.	0.025	T	6:40 a. m.	4.20	0.0009
6:00 p. m.	4.35	0.0009	1:20 a. m.	0.025	T	7:00 a. m.	3.77	0.0008
12:00 p. m.	3.77	0.0008	1:40 a. m.	0.025	T	7:20 a. m.	3.64	0.0008
STORM OF JULY 8, TOTAL RAINFALL 1.65 INCHES			4:20 a. m.	0.025	T	7:40 a. m.	3.51	0.0008
July 8:			4:40 a. m.	0.025	T	8:00 a. m.	3.38	0.0007
5:04 a. m. ²	1.04	0.0002	5:00 a. m.	0.025	T	8:20 a. m.	3.25	0.0002
5:20 a. m.	1.21	0.0003	5:20 a. m.	0.025	T	8:40 a. m.	3.03	0.0007
5:30 a. m.	1.76	0.0004	5:40 a. m.	0.028	T	8:42 a. m.	3.03	0.0007
5:40 a. m.	2.02	0.0004	6:00 a. m.	0.028	T	8:45 a. m.	4.05	0.0009
5:50 a. m.	2.91	0.0006	6:20 a. m.	0.028	T	8:50 a. m.	4.20	0.0009
5:55 a. m.	4.50	0.0010	6:40 a. m.	0.028	T	8:55 a. m.	4.50	0.0010
5:57 a. m.	6.54	0.0014	7:00 a. m.	0.031	T	8:58 a. m.	5.82	0.0013
6:00 a. m.	8.39	0.0018	7:20 a. m.	0.031	T	9:00 a. m.	7.30	0.0016
6:08 a. m.	10.1	0.0022	7:40 a. m.	0.035	T	9:01 a. m.	9.36	0.0020
6:20 a. m.	8.67	0.0019	8:00 a. m.	0.035	T	9:02 a. m.	10.6	0.0023
6:40 a. m.	6.35	0.0014	8:20 a. m.	0.039	T	9:04 a. m.	13.7	0.0030
6:54 a. m.	8.20	0.0018	8:40 a. m.	0.039	T	9:10 a. m.	17.0	0.0037
7:00 a. m.	10.1	0.0022	9:00 a. m.	0.039	T	9:20 a. m.	14.1	0.0030
7:10 a. m.	11.6	0.0025	9:20 a. m.	0.039	T	9:25 a. m.	13.7	0.0030
7:20 a. m.	10.6	0.0023	9:40 a. m.	0.039	T	9:40 a. m.	14.1	0.0030
7:40 a. m.	8.39	0.0018	10:00 a. m.	0.043	T	9:50 a. m.	14.5	0.0031
8:00 a. m.	10.6	0.0022	10:20 a. m.	0.047	T	10:00 a. m.	14.1	0.0030
8:08 a. m.	13.4	0.0029	10:40 a. m.	0.047	T	10:07 a. m.	18.1	0.0039
8:12 a. m.	18.1	0.0039	1:00 p. m.	0.047	T	10:10 a. m.	21.6	0.0047
8:16 a. m.	25.0	0.0054	1:20 p. m.	0.047	T	10:13 a. m.	28.7	0.0062
8:18 a. m.	33.8	0.0073	1:40 p. m.	0.039	T	10:14 a. m.	47.4	0.0102
						10:15 a. m.	53.7	0.0116
						10:20 a. m.	71.4	0.0154
						10:21 a. m.	76.6	0.0165
						10:26 a. m.	82.2	0.0178
						10:30 a. m.	80.3	0.0173

² Rain began.³ Rain ended.

TABLE 66.—Run-off from watershed 97 for selected storms, 1939—Continued

STORM OF OCT. 25-27, TOTAL RAINFALL 3.83 INCHES—Continued				STORM OF OCT. 25-27, TOTAL RAINFALL 3.83 INCHES—Continued.				STORM OF OCT. 25-27, TOTAL RAINFALL 3.83 INCHES—Continued			
Date and time	Discharge	Accumulated run-off		Date and time	Discharge	Accumulated run-off		Date and time	Discharge	Accumulated run-off	
Oct. 26—Con.	Sec.-ft.	In. per hr.	In.	Oct. 27—Con.	Sec.-ft.	In. per hr.	In.	Oct. 27—Con.	Sec.-ft.	In. per hr.	In.
10:40 a. m.-----	74.8	0.0162	0.0250	6:25 a. m.-----	13.7	0.0030	0.0579	7:20 p. m.-----	9.12	0.0020	0.1164
11:00 a. m.-----	57.5	0.0124	0.0298	6:35 a. m.-----	17.0	0.0037	0.0585	7:40 p. m.-----	8.64	0.0019	0.1170
11:10 a. m.-----	48.7	0.0105	0.0324	6:40 a. m.-----	17.6	0.0038	0.0588	8:00 p. m. ³ -----	8.40	0.0018	0.1176
11:20 a. m.-----	42.8	0.0092	0.0340	7:00 a. m.-----	18.6	0.0040	0.0601	9:00 p. m.-----	7.52	0.0016	0.1193
11:40 a. m.-----	34.5	0.0075	0.0368	7:15 a. m.-----	19.6	0.0042	0.0611	10:00 p. m.-----	6.73	0.0015	0.1208
12:00 m.-----	27.9	0.0060	0.0390	7:20 a. m.-----	20.3	0.0044	0.0615	11:00 p. m.-----	6.17	0.0013	0.1222
12:20 p. m.-----	22.9	0.0050	0.0408	7:30 a. m.-----	23.6	0.0051	0.0623	12:00 p. m.-----	5.64	0.0012	0.1235
12:40 p. m.-----	17.0	0.0040	0.0423	7:40 a. m.-----	27.0	0.0058	0.0632	Oct. 28:			
1:00 p. m.-----	15.0	0.0032	0.0435	7:45 a. m.-----	28.7	0.0062	0.0637	1:00 a. m.-----	5.14	0.0011	0.1247
1:20 p. m.-----	12.6	0.0027	0.0445	7:55 a. m.-----	29.5	0.0064	0.0647	2:00 a. m.-----	4.65	0.0010	0.1257
1:40 p. m.-----	10.9	0.0024	0.0453	8:00 a. m.-----	28.7	0.0062	0.0652	3:00 a. m.-----	4.35	0.0009	0.1267
2:00 p. m.-----	9.60	0.0021	0.0460	8:20 a. m.-----	26.2	0.0057	0.0672	4:30 a. m.-----	3.90	0.0008	0.1280
2:30 p. m.-----	8.19	0.0018	0.0470	8:40 a. m.-----	24.2	0.0052	0.0690	5:30 a. m.-----	3.64	0.0008	0.1288
3:00 p. m.-----	7.11	0.0015	0.0478	9:00 a. m.-----	22.9	0.0050	0.0707	6:30 a. m.-----	3.38	0.0007	0.1296
4:00 p. m.-----	5.64	0.0012	0.0492	9:20 a. m.-----	20.9	0.0045	0.0723	8:00 a. m.-----	3.03	0.0007	0.1306
5:00 p. m.-----	4.65	0.0010	0.0503	9:35 a. m.-----	20.9	0.0045	0.0734	9:00 a. m.-----	2.91	0.0006	0.1312
6:00 p. m.-----	3.90	0.0008	0.0512	9:40 a. m.-----	21.6	0.0047	0.0738	10:30 a. m.-----	2.59	0.0006	0.1321
7:00 p. m.-----	3.25	0.0002	0.0517	10:00 a. m.-----	25.5	0.0055	0.0755	11:30 a. m.-----	2.49	0.0005	0.1326
8:00 p. m.-----	2.91	0.0006	0.0521	10:20 a. m.-----	29.5	0.0064	0.0775	1:00 p. m.-----	2.40	0.0005	0.1334
9:00 p. m.-----	2.59	0.0006	0.0527	10:40 a. m.-----	32.8	0.0071	0.0797	2:00 p. m.-----	2.30	0.0005	0.1339
10:00 p. m.-----	2.40	0.0005	0.0532	11:00 a. m.-----	35.5	0.0077	0.0821	3:30 p. m.-----	2.11	0.0005	0.1346
11:20 p. m.-----	2.11	0.0005	0.0538	11:20 a. m.-----	38.7	0.0084	0.0848	5:00 p. m.-----	2.02	0.0004	0.1353
12:00 p. m.-----	2.02	0.0004	0.0541	11:30 a. m.-----	39.7	0.0086	0.0862	7:00 p. m.-----	1.85	0.0004	0.1361
Oct. 27:				11:40 a. m.-----	38.7	0.0084	0.0876	8:30 p. m.-----	1.76	0.0004	0.1367
1:00 a. m.-----	1.85	0.0004	0.0545	12:00 a. m.-----	37.6	0.0081	0.0903	10:00 p. m.-----	1.69	0.0004	0.1373
2:00 a. m.-----	1.69	0.0004	0.0549	12:20 p. m.-----	35.5	0.0077	0.0929	12:00 p. m.-----	1.62	0.0004	0.1380
3:20 a. m.-----	1.54	0.0003	0.0554	12:40 p. m.-----	32.0	0.0069	0.0953	Oct. 29:			
3:50 a. m. ¹ -----	1.47	0.0003	0.0556	1:00 p. m.-----	27.9	0.0060	0.0975	1:00 a. m.-----	1.54	0.0003	0.1383
4:00 a. m.-----	1.47	0.0003	0.0556	1:20 p. m.-----	24.2	0.0052	0.0994	2:40 a. m.-----	1.47	0.0003	0.1388
4:20 a. m.-----	1.54	0.0003	0.0557	1:40 p. m.-----	21.6	0.0047	0.1010	4:30 a. m.-----	1.40	0.0003	0.1394
4:30 a. m.-----	1.54	0.0003		2:00 p. m.-----	19.1	0.0041	0.1025	6:30 a. m.-----	1.34	0.0003	0.1400
4:40 a. m.-----	1.62	0.0004		2:20 p. m.-----	17.0	0.0037	0.1038	8:30 a. m.-----	1.28	0.0003	0.1406
4:50 a. m.-----	1.76	0.0004	0.0558	2:40 p. m.-----	15.0	0.0032	0.1051	10:30 a. m.-----	1.21	0.0003	0.1411
5:00 a. m.-----	2.11	0.0005	0.0559	3:00 p. m.-----	13.7	0.0030	0.1061	12:30 p. m.-----	1.15	0.0002	0.1416
5:10 a. m.-----	2.69	0.0006	0.0560	3:20 p. m.-----	12.6	0.0027	0.1070	3:00 p. m.-----	1.09	0.0002	0.1422
5:15 a. m.-----	3.25	0.0007		3:40 p. m.-----	12.3	0.0027	0.1079	7:30 p. m.-----	1.04	0.0002	0.1432
5:18 a. m.-----	4.20	0.0009		4:00 p. m.-----	11.9	0.0026	0.1088	11:30 p. m.-----	.994	0.0002	0.1441
5:20 a. m.-----	4.97	0.0011		4:20 p. m.-----	11.6	0.0025	0.1096	12:00 p. m.-----	.994	0.0002	0.1452
5:25 a. m.-----	6.54	0.0014	0.0561	4:40 p. m.-----	11.2	0.0024	0.1104	Oct. 30:			
5:30 a. m.-----	7.74	0.0017	0.0562	5:00 p. m.-----	10.9	0.0024	0.1112	2:30 a. m.-----	.946	0.0002	0.1457
5:32 a. m.-----	7.96	0.0017	0.0562	5:20 p. m.-----	10.6	0.0023	0.1120	6:00 a. m.-----	.898	0.0002	0.1464
5:40 a. m.-----	7.96	0.0017	0.0564	5:40 p. m.-----	10.6	0.0023	0.1128	10:00 a. m.-----	.850	0.0002	0.1472
5:43 a. m.-----	7.96	0.0017	0.0565	6:00 p. m.-----	10.4	0.0023	0.1136	4:00 p. m.-----	.810	0.0002	0.1483
6:00 a. m.-----	9.12	0.0020	0.0570	6:20 p. m.-----	10.1	0.0022	0.1143	5:00 p. m.-----	.810	0.0002	0.1485
6:10 a. m.-----	9.36	0.0020	0.0573	6:40 p. m.-----	9.86	0.0021	0.1150	11:00 p. m.-----	.770	0.0002	0.1495
6:20 a. m.-----	11.6	0.0025	0.0577	7:00 p. m.-----	9.36	0.0020	0.1157	12:00 p. m.-----	.770	0.0002	0.1497

¹ Rain began.² Rain ended.

TABLE 67.—Run-off from watershed 5 for selected storms, 1939

[Area 349 acres; rainfall measured at recording rain gages 1 and 8]

Date and time		Discharge ¹		Accumulated run-off	Date and time		Discharge ¹		Accumulated run-off	Date and time		Discharge ¹		Accumulated run-off
STORM OF FEBRUARY 14-15, TOTAL RAIN-FALL 1.45 INCHES					STORM OF FEBRUARY 14-15, TOTAL RAIN-FALL 1.45 INCHES—Continued					STORM OF FEBRUARY 14-15, TOTAL RAIN-FALL 1.45 INCHES—Continued				
Feb. 14:		Sec.-ft.	In. per hr.	In.	Feb. 15—Con.		Sec.-ft.	In. per hr.	In.	Feb. 15—Con.		Sec.-ft.	In. per hr.	In.
8:20 p. m.-----		0.908	0.0026	0	3:40 a. m.-----		12.1	0.0344	0.1234	12:20 p. m.-----		3.75	0.0106	0.2658
8:40 p. m.-----		.908	0.0026	.0009	4:00 a. m.-----		9.65	0.0274	.1337	12:40 p. m.-----		3.75	0.0106	.2693
9:00 p. m.-----		.958	0.0027	.0018	4:20 a. m.-----		8.65	0.0246	.1424	1:00 p. m.-----		3.75	0.0106	.2728
9:20 p. m.-----		1.01	0.0029	0.0027	4:40 a. m.-----		7.98	0.0227	.1503	1:20 p. m.-----		3.63	0.0103	.2763
9:40 p. m.-----		1.06	0.0030	0.0037	5:00 a. m.-----		7.56	0.0215	.1577	1:40 p. m.-----		3.63	0.0103	.2797
10:00 p. m.-----		1.11	0.0031	0.0047	5:20 a. m.-----		7.35	0.0209	.1648	2:00 p. m.-----		3.50	0.0099	.2831
10:20 p. m.-----		1.11	0.0031	0.0057	5:40 a. m.-----		7.14	0.0203	.1717	3:00 p. m.-----		3.38	0.0096	.2929
10:40 p. m.-----		1.22	0.0035	0.0068	6:00 a. m.-----		6.72	0.0191	.1783	4:00 p. m.-----		3.14	0.0089	.3021
11:00 p. m.-----		1.28	0.0036	0.0080	6:20 a. m.-----		6.51	0.0185	.1846	5:00 p. m.-----		3.03	0.0086	.3109
11:20 p. m.-----		1.41	0.0040	0.0093	6:40 a. m.-----		6.13	0.0174	.1906	6:00 p. m.-----		2.92	0.0083	.3193
11:40 p. m.-----		1.61	0.0046	0.0107	7:00 a. m.-----		5.96	0.0169	.1963	8:00 p. m.-----		2.70	0.0077	.3353
12:00 p. m.-----		1.75	0.0050	0.0123	7:20 a. m.-----		5.62	0.0160	.2018	10:00 p. m.-----		2.52	0.0072	.3501
Feb. 15:					7:40 a. m.-----		5.44	0.0154	.2070	12:00 p. m.-----		2.33	0.0066	.3639
12:20 a. m.-----		2.07	0.0059	0.0141	8:00 a. m.-----		5.27	0.0150	.2121	Feb. 16:				
12:40 a. m.-----		2.33	0.0066	0.0162	8:20 a. m.-----		5.10	0.0145	.2170	2:00 a. m.-----		2.16	0.0061	.3767
1:00 a. m.-----		3.03	0.0086	0.0187	8:40 a. m.-----		4.93	0.0140	.2217	4:00 a. m.-----		1.99	0.0056	.3883
1:10 a. m.-----		3.50	0.0099	0.0202	9:00 a. m.-----		4.76	0.0135	.2263	6:00 a. m.-----		1.82	0.0052	.3991
1:20 a. m.-----		4.31	0.0122	0.0220	9:20 a. m.-----		4.59	0.0130	.2307	8:00 a. m.-----		1.82	0.0052	.4095
1:30 a. m.-----		5.44	0.0154	0.0243	9:40 a. m.-----		4.45	0.0126	.2350	9:00 a. m.-----		1.90	0.0054	.4148
1:40 a. m.-----		7.56	0.0215	0.0274	10:00 a. m.-----		4.31	0.0122	.2391	10:00 a. m.-----		2.16	0.0061	.4206
1:50 a. m.-----		9.90	0.0281	0.0315	10:20 a. m.-----		4.31	0.0122	.2431	11:00 a. m.-----		2.07	0.0059	.4266
2:00 a. m.-----		13.0	0.0369	0.0369	10:40 a. m.-----		4.16	0.0118	.2471	12:00 m.-----		2.07	0.0059	.4325
2:10 a. m.-----		16.7	0.0474	0.0439	11:00 a. m.-----		4.02	0.0114	.2510	3:00 p. m.-----		1.99	0.0056	.4499
2:20 a. m.-----		20.3	0.0577	0.0527	11:20 a. m.-----		4.02	0.0114	.2548	6:00 p. m.-----		1.90	0.0054	.4664
2:40 a. m.-----		23.1	0.0656	0.0732	11:40 a. m.-----		3.88	0.0110	.2585	8:00 p. m.-----		1.75	0.0050	.4768
3:00 a. m.-----		19.9	0.0565	0.0935	12:00 m.-----		3.88	0.0110	.2622	12:00 p. m.-----		1.75	0.0050	.4968
3:20 a. m.-----		15.6	0.0443	0.1103										

¹ Observed flow without corrections for base flow;

TABLE 67.—Run-off from watershed 5 for selected storms, 1939—Continued

Date and time			Discharge			Accumulated run-off					
STORM OF JUNE 18-19, TOTAL RAINFALL 3.03 INCHES											
June 18:			Sec.-ft.			In. per hr.			In.		
7:00 a. m.			0.025			0.0001			0		
7:30 a. m.			.028			.0001			0		
7:40 a. m.			.028			.0001			0		
8:00 a. m.			.031			.0001			0		
8:20 a. m.			.035			.0001			0		
8:40 a. m.			.047			.0001			0		
9:00 a. m.			.066			.0002			0		
9:10 a. m.			.104			.0003			0		
9:20 a. m.			.177			.0005			.0001		
9:30 a. m.			.251			.0007			.0002		
9:40 a. m.			.335			.0010			.0003		
9:50 a. m.			.406			.0011			.0005		
10:00 a. m.			.458			.0013			.0007		
10:10 a. m.			.546			.0015			.0009		
10:20 a. m.			.734			.0021			.0012		
10:40 a. m.			.958			.0027			.0020		
11:00 a. m.			1.16			.0033			.0030		
11:20 a. m.			1.61			.0046			.0043		
11:30 a. m.			2.07			.0059			.0052		
11:40 a. m.			2.70			.0077			.0063		
11:50 a. m.			3.50			.0099			.0078		
12:00 m.			3.88			.0110			.0095		
12:20 p. m.			4.31			.0122			.0134		
12:40 p. m.			6.13			.0174			.0183		
12:50 p. m.			6.72			.0191			.0213		
1:00 p. m.			6.72			.0191			.0245		
1:20 p. m.			5.44			.0154			.0302		
1:40 p. m.			4.45			.0126			.0349		
2:00 p. m.			3.75			.0106			.0504		
2:20 p. m.			3.03			.0086			.0536		
2:40 p. m.			2.42			.0069			.0562		
3:00 p. m.			1.90			.0054			.0583		
3:20 p. m.			1.61			.0046			.0600		
3:40 p. m.			1.35			.0038			.0614		
4:00 p. m.			1.16			.0033			.0626		
4:20 p. m.			1.01			.0029			.0636		
4:40 p. m.			.908			.0026			.0645		
5:00 p. m.			.821			.0023			.0653		
5:20 p. m.			.777			.0022			.0660		
5:40 p. m.			.734			.0021			.0667		
6:00 p. m.			.690			.0020			.0674		
6:20 p. m.			.654			.0018			.0680		
6:40 p. m.			.654			.0018			.0686		
7:00 p. m.			.618			.0017			.0692		
7:20 p. m.			.734			.0021			.0698		
7:40 p. m.			.953			.0027			.0706		
8:00 p. m.			1.28			.0036			.0717		
8:20 p. m.			1.35			.0038			.0729		
9:00 p. m.			1.35			.0038			.0742		
9:20 p. m.			1.54			.0044			.0756		
9:40 p. m.			1.47			.0042			.0770		
10:00 p. m.			1.54			.0044			.0784		
10:20 p. m.			1.68			.0048			.0799		
10:40 p. m.			1.82			.0052			.0816		
11:00 p. m.			1.90			.0054			.0834		
11:20 p. m.			1.90			.0054			.0852		
11:40 p. m.			1.90			.0054			.0870		
12:00 p. m.			2.33			.0066			.0890		
June 19:			2.61			.0074			.0913		
12:20 a. m.			3.38			.0096			.0927		
12:30 a. m.			4.31			.0122			.0936		
12:40 a. m.			6.30			.0179			.0948		
12:50 a. m.			7.98			.0227			.0982		
12:55 a. m.			8.19			.0233			.1001		
1:00 a. m.			7.98			.0227			.1020		
1:10 a. m.			7.77			.0221			.1057		
1:20 a. m.			8.19			.0233			.1095		
1:40 a. m.			10.2			.0290			.1182		
1:45 a. m.			10.4			.0295			.1206		
1:50 a. m.			9.90			.0281			.1230		
2:00 a. m.			8.90			.0253			.1274		
2:20 a. m.			6.30			.0179			.1346		
2:40 a. m.			4.76			.0135			.1398		
3:00 a. m.			4.02			.0114			.1439		
3:20 a. m.			3.88			.0110			.1476		
3:40 a. m.			4.93			.0140			.1518		
3:50 a. m.			5.44			.0154			.1542		
4:00 a. m.			5.44			.0154			.1568		
4:10 a. m.			5.27			.0150			.1593		
4:20 a. m.			5.44			.0154			.1618		
4:40 a. m.			6.72			.0191			.1675		
4:45 a. m.			6.72			.0191			.1691		
5:00 a. m.			6.51			.0185			.1738		
5:20 a. m.			5.62			.0160			.1795		
5:40 a. m.			4.93			.0140			.1845		
6:00 a. m.			4.31			.0122			.1889		
6:20 a. m.			3.88			.0110			.1928		
6:40 a. m.			3.50			.0099			.1963		
7:00 a. m.			3.25			.0092			.1995		
7:20 a. m.			2.92			.0083			.2024		
2 Rain began.											

Date and time			Discharge			Accumulated run-off					
STORM OF JUNE 18-19, TOTAL RAINFALL 3.03 INCHES—Continued											
June 19—Con.			Sec.-ft.			In. per hr.			In.		
7:40 a. m.			2.70			0.0077			0.2051		
8:00 a. m.			2.52			.0072			.2076		
8:20 a. m.			2.42			.0069			.2099		
8:30 a. m.			2.33			.0066			.2110		
8:40 a. m.			2.33			.0066			.2121		
9:00 a. m.			2.24			.0064			.2143		
9:20 a. m.			2.16			.0061			.2164		
9:40 a. m.			1.99			.0056			.2183		
10:00 a. m.			1.90			.0054			.2201		
11:00 a. m.			1.75			.0050			.2253		
12:00 m.			1.47			.0042			.2299		
1:00 p. m.			1.35			.0038			.2339		
2:00 p. m.			1.22			.0035			.2375		
3:00 p. m.			1.06			.0030			.2407		
4:00 p. m.			.958			.0027			.2435		
5:00 p. m.			.864			.0024			.2461		
6:00 p. m.			.821			.0023			.2485		
7:00 p. m.			.777			.0022			.2507		
8:00 p. m.			.690			.0020			.2528		
9:00 p. m.			.654			.0018			.2547		
10:00 p. m.			.618			.0017			.2565		
12:00 p. m.			.582			.0016			.2597		
June 20:			2:00 a. m.			.510			.2627		
			4:00 a. m.			.510			.2655		
			6:00 a. m.			.484			.2683		
			9:00 a. m.			.458			.2725		
			12:00 m.			.406			.2761		
			6:00 p. m.			.251			.2817		
			10:00 p. m.			.251			.2845		
			12:00 p. m.			.267			.2860		
STORM OF JULY 8, TOTAL RAINFALL 0.90 INCH											
July 8:			5:04 a. m. ¹								
12:30 p. m.			0.141			0.0004			0		
12:40 p. m.			.152			.0004			.0001		
12:46 p. m.			.152			.0004					
12:47 p. m.			.219			.0006					
12:48 p. m.			.312			.0009					
12:49 p. m.			.458			.0013					
12:50 p. m.			.582			.0016					
12:52 p. m.			.690			.0020			.0002		
12:54 p. m.			.864			.0024			.0003		
12:55 p. m.			.821			.0023			.0003		
12:57 p. m.			1.16			.0033			.0004		
12:58 p. m.			1.75			.0050			.0005		
12:59 p. m.			2.52			.0072			.0006		
1:00 p. m.			3.25			.0092			.0007		
1:03 p. m.			4.59			.0130			.0013		
1:06 p. m.			6.72			.0191			.0021		
1:10 p. m.			7.56			.0215			.0036		
1:14 p. m.			7.98			.0227			.0051		
1:20 p. m.			6.72			.0191			.0072		
1:30 p. m.			5.44			.0154			.0101		
1:40 p. m.			5.10			.0145			.0126		
1:48 p. m.			5.10			.0145			.0145		
1:50 p. m.			5.27			.0150			.0150		
1:57 p. m.			6.30			.0179			.0169		
2:00 p. m.			6.30			.0179			.0178		
2:03 p. m.			6.30			.0179			.0187		
2:10 p. m.			5.62			.0160			.0207		
2:20 p. m.			4.76			.0135			.0232		
2:30 p. m.			4.02			.0114			.0253		
2:40 p. m.			3.50			.0099			.0271		
2:45 p. m.			3.25			.0092			.0279		
2:50 p. m.			3.03			.0086			.0286		
3:00 p. m.			2.70			.0077			.0300		
3:20 p. m.			2.16			.0061			.0323		
3:40 p. m.			1.82			.0052			.0342		
4:00 p. m.			1.68			.0048			.0359		
4:20 p. m.			1.61			.0046			.0375		
5:00 p. m.			1.28			.0036			.0402		
6:00 p. m.			.958			.0027			.0434		
7:00 p. m.			.777			.0022			.0458		
8:00 p. m.			.654			.0018			.0478		
9:00 p. m.			.618			.0017			.0496		
10:00 p. m.			.582			.0016			.0512		
12:00 p. m.			.484			.0014			.0542		
July 9:			3:00 a. m.			.432			.0012		
			6:00 a. m.			.380			.0011		
			9:00 a. m.			.357			.0010		
			10:00 a. m.			.335			.0010		
			12:00 m.			.290			.0008		
			2:00 p. m.			.235			.0007		
			4:00 p. m.			.204			.0006		
STORM OF JULY 8, TOTAL RAINFALL 0.90 INCH—Continued											
July 9—Con.			Sec.-ft.			In. per hr.			In.		
5:00 p. m.			0.190			0.0005			0.0708		
7:00 p. m.			.177			.0005			.0718		
12:00 p. m.			.177			.0005			.0743		
STORM OF OCTOBER 25-27, TOTAL RAINFALL 3.28 INCHES											
Oct. 25:			4:20 a. m. ¹								
			7:00 a. m.			0.011			T		
			7:20 a. m.			.013			T		
			7:40 a. m. ²			.013			T		
			8:00 a. m.			.013			T		
			8:20 a. m.			.013			T		
			8:40 a. m.			.013			T		
			9:00 a. m.			.013			T		
			9:20 a. m.			.013			T		
			9:30 a. m.			.015			T		
			9:40 a. m.			.017			T		
			10:00 a. m.			.019			0.0001		
			10:20 a. m.			.019			.0001		
			10:40 a. m.			.022			.0001		
			11:00 a. m.			.022			.0001		
			11:20 a. m.			.025			.		

¹ Rain began.² Rain Ended.

TABLE 67.—Run-off from watershed 5 for selected storms, 1939—Continued

STORM OF OCTOBER 25-27, TOTAL RAINFALL 3.28 INCHES—Continued				STORM OF OCTOBER 25-27, TOTAL RAINFALL 3.28 INCHES—Continued				STORM OF OCTOBER 25-27, TOTAL RAINFALL 3.28 INCHES—Continued			
Date and time	Discharge	Accumulated run-off		Date and time	Discharge	Accumulated run-off		Date and time	Discharge	Accumulated run-off	
Oct. 26—Con.	Sec.-ft.	In. per hr.	In.	Oct. 26—Con.	Sec.-ft.	In. per hr.	In.	Oct. 27—Con.	Sec.-ft.	In. per hr.	In.
12:30 a. m.	0.908	0.0026	0.0065	5:40 p. m.	0.112	0.0003	0.0242	9:40 a. m.	1.41	0.0040	0.0485
12:35 a. m.	1.16	.0033	.0067	6:50 p. m.	.096	.0003	.0245	10:00 a. m.	1.54	.0044	.0499
12:40 a. m.	1.22	.0035	.0070	8:00 p. m.	.083	.0002	.0248	10:15 a. m.	1.75	.0050	.0511
12:46 a. m.	1.22	.0035	.0072	9:30 p. m.	.071	.0002	.0252	10:20 a. m.	1.68	.0048	.0515
1:00 a. m.	1.16	.0033	.0081	11:20 p. m.	.061	.0002	.0255	10:40 a. m.	1.68	.0048	.0531
1:20 a. m.	1.01	.0029	.0091	12:00 p. m.	.056	.0002	.0256	11:00 a. m.	1.68	.0048	.0546
1:40 a. m.	.908	.0026	.0101	Oct. 27:				11:20 a. m.	1.68	.0054	.0553
2:00 a. m.	.777	.0022	.0108	12:30 a. m.	.056	.0002	.0257	11:40 a. m.	1.99	.0057	.0582
2:20 a. m.	.654	.0019	.0116	2:00 a. m.	.052	.0001	.0259	12:00 m.	1.82	.0052	.0600
2:30 a. m.	.618	.0018	.0118	3:50 a. m.	.047	.0001	.0262	12:20 p. m.	1.54	.0044	.0616
2:40 a. m.	.618	.0018	.0121	4:00 a. m.	.047	.0001	.0262	12:40 p. m.	1.35	.0038	.0619
3:00 a. m.	.546	.0016	.0127	4:20 a. m.	.047	.0001	.0262	1:00 p. m.	1.16	.0033	.0641
3:20 a. m.	.484	.0014	.0132	4:35 a. m.	.052	.0001	.0263	1:20 p. m.	1.01	.0029	.0652
3:40 a. m.	.432	.0012	.0136	4:40 a. m.	.056	.0002		1:30 p. m.	.908	.0026	.0656
4:00 a. m.	.380	.0011	.0140	4:45 a. m.	.061	.0002		1:40 p. m.	.958	.0027	.0662
4:20 a. m.	.357	.0010	.0144	4:50 a. m.	.071	.0002		1:50 p. m.	1.01	.0029	.0665
4:40 a. m.	.335	.0010	.0147	4:55 a. m.	.083	.0002		2:00 p. m.	.958	.0027	.0670
5:00 a. m.	.335	.0010	.0150	5:00 a. m.	.104	.0003	.0264	2:20 p. m.	.908	.0026	.0679
5:20 a. m.	.335	.0010	.0152	5:05 a. m.	.131	.0004		2:40 p. m.	.908	.0026	.0687
5:40 a. m.	.312	.0009	.0156	5:10 a. m.	.177	.0005		3:00 p. m.	.864	.0025	.0696
6:00 a. m.	.290	.0008	.0159	5:15 a. m.	.235	.0007	.0265	3:20 p. m.	.777	.0022	.0703
6:20 a. m.	.267	.0008	.0162	5:18 a. m.	.290	.0008		3:40 p. m.	.734	.0021	.0711
6:40 a. m.	.235	.0007	.0164	5:19 a. m.	.357	.0010		4:00 p. m.	.690	.0020	.0717
7:00 a. m.	.219	.0006	.0166	5:20 a. m.	.432	.0012	.0266	4:20 p. m.	.777	.0022	.0724
7:20 a. m.	.190	.0005	.0168	5:21 a. m.	.510	.0015		4:40 p. m.	.777	.0022	.0732
7:40 a. m.	.177	.0005	.0170	5:22 a. m.	.654	.0017		5:00 p. m.	.777	.0022	.0739
8:00 a. m.	.164	.0005	.0172	5:23 a. m.	.821	.0023		5:20 p. m.	.734	.0021	.0745
8:20 a. m.	.152	.0004	.0173	5:24 a. m.	.958	.0027	.0267	5:40 p. m.	.690	.0020	.0753
8:25 a. m.	.152	.0004	.0173	5:26 a. m.	1.22	.0035	.0268	6:00 p. m.	.654	.0019	.0759
8:30 a. m.	.190	.0005	.0174	5:28 a. m.	1.54	.0044	.0269	6:20 p. m.	.582	.0017	.0765
8:40 a. m.	.235	.0007	.0175	5:30 a. m.	1.75	.0050	.0270	6:40 p. m.	.546	.0016	.0770
8:50 a. m.	.290	.0008	.0176	5:38 a. m.	2.07	.0059	.0278	7:00 p. m.	.510	.0015	.0775
9:00 a. m.	.335	.0010	.0178	5:40 a. m.	2.07	.0059	.0280	7:20 p. m.	.484	.0014	.0780
9:13 a. m.	.335	.0010	.0179	5:50 a. m.	1.75	.0050	.0289	7:40 p. m.	.458	.0013	.0785
9:20 a. m.	.432	.0012	.0181	6:00 a. m.	1.47	.0042	.0297	8:00 p. m. ³	.406	.0012	.0789
9:30 a. m.	.546	.0016	.0183	6:14 a. m.	1.22	.0035	.0305	9:00 p. m.	.357	.0010	.0799
9:35 a. m.	.546	.0016	.0185	6:20 a. m.	1.47	.0042	.0309	10:00 p. m.	.312	.0009	.0809
9:40 a. m.	.546	.0016	.0186	6:25 a. m.	1.99	.0057	.0313	11:10 p. m.	.267	.0008	.0819
10:00 a. m.	.458	.0013	.0191	6:30 a. m.	2.33	.0066	.0318	12:00 p. m.	.235	.0007	.0825
10:20 a. m.	.406	.0012	.0195	6:35 a. m.	2.61	.0074	.0324	Oct. 28:			
10:40 a. m.	.357	.0010	.0198	6:40 a. m.	3.14	.0089	.0331	1:30 a. m.	.204	.0006	.0834
11:00 a. m.	.312	.0009	.0204	6:45 a. m.	3.14	.0089	.0339	2:40 a. m.	.177	.0005	.0840
11:20 a. m.	.290	.0008	.0204	6:50 a. m.	3.14	.0089	.0346	4:20 a. m.	.152	.0004	.0848
11:40 a. m.	.267	.0008	.0207	7:00 a. m.	2.92	.0083	.0360	6:00 a. m.	.131	.0004	.0855
12:00 m.	.251	.0007	.0209	7:20 a. m.	2.33	.0066	.0385	8:00 a. m.	.112	.0003	.0862
12:15 p. m.	.251	.0007	.0211	7:40 a. m.	1.82	.0052	.0405	9:40 a. m.	.096	.0003	.0866
12:20 p. m.	.251	.0007	.0212	8:00 a. m.	1.54	.0044	.0421	12:00 m.	.083	.0002	.0872
12:40 p. m.	.290	.0008	.0214	8:10 a. m.	1.41	.0040	.0428	1:40 p. m.	.077	.0002	.0876
1:00 p. m.	.290	.0008	.0217	8:20 a. m.	1.41	.0040	.0434	3:00 p. m.	.071	.0002	.0879
1:20 p. m.	.290	.0008	.0220	8:30 a. m.	1.41	.0040	.0441	4:40 p. m.	.066	.0002	.0882
1:40 p. m. ³	.267	.0008	.0222	8:40 a. m.	1.35	.0038	.0448	7:00 p. m.	.061	.0002	.0886
2:00 p. m.	.235	.0007	.0225	9:00 a. m.	1.28	.0036	.0460	8:00 p. m.	.061	.0002	.0888
3:00 p. m.	.190	.0005	.0231	9:10 a. m.	1.35	.0038	.0466	11:00 p. m.	.056	.0002	.0893
4:00 p. m.	.152	.0004	.0236	9:20 a. m.	1.28	.0036	.0472	12:00 p. m.	.056	.0002	.0895
4:40 p. m.	.131	.0004	.0238	9:25 a. m.	1.28	.0036	.0475				

³ Rain ended.

TABLE 68.—Run-off from watershed 10 for selected storms, 1939

[Area 122 acres; rainfall measured at recording rain gage 14]

Date and time		Discharge ¹		Accumulated run-off	Date and time		Discharge ¹		Accumulated run-off	Date and time		Discharge ¹		Accumulated run-off
STORM OF FEB. 14-15, TOTAL RAINFALL 1.35 INCHES					STORM OF FEB. 14-15, TOTAL RAINFALL 1.35 INCHES—Continued					STORM OF FEB. 14-15, TOTAL RAINFALL 1.35 INCHES—Continued				
Feb. 14:		Sec.-ft.	In. per hr.	In.	Feb. 15—Con.		Sec.-ft.	In. per hr.	In.	Feb. 15—Con.		Sec.-ft.	In. per hr.	In.
8:30 p. m.-----		0.159	0.0013	0	1:25 a. m.-----		1.57	0.0128	0.0141	3:50 a. m.-----		4.18	0.0340	0.1281
8:40 p. m.-----		.159	.0013	.0002	1:30 a. m.-----		1.84	.0150	.0153	4:00 a. m.-----		3.76	.0306	.1335
9:00 p. m.-----		.159	.0013	.0006	1:35 a. m.-----		2.13	.0173	.0167	4:10 a. m.-----		3.35	.0272	.1383
9:20 p. m.-----		.159	.0013	.0010	1:40 a. m.-----		2.43	.0198	.0183	4:20 a. m.-----		3.07	.0250	.1427
9:40 p. m.-----		.179	.0014	.0015	1:45 a. m.-----		2.85	.0232	.0201	4:40 a. m.-----		2.63	.0214	.1504
10:00 p. m.-----		.179	.0014	.0020	1:50 a. m.-----		3.12	.0254	.0221	5:00 a. m.-----		2.43	.0198	.1573
10:20 p. m.-----		.201	.0016	.0025	2:00 a. m.-----		3.94	.0320	.0269	5:20 a. m.-----		2.33	.0189	.1638
10:40 p. m.-----		.201	.0016	.0030	2:10 a. m.-----		4.75	.0386	.0328	5:40 a. m.-----		2.23	.0181	.1700
11:00 p. m.-----		.223	.0018	.0036	2:20 a. m.-----		5.62	.0457	.0398	6:00 a. m.-----		2.13	.0173	.1759
11:20 p. m.-----		.270	.0022	.0043	2:30 a. m.-----		7.15	.0581	.0484	6:10 a. m.-----		2.13	.0173	.1788
11:40 p. m.-----		.294	.0024	.0051	2:40 a. m.-----		8.00	.0650	.0587	7:00 a. m.-----		1.93	.0157	.1926
12:00 p. m.-----		.345	.0028	.0060	2:00 a. m.-----		8.47	.0688	.0699	7:30 a. m.-----		1.80	.0146	.2002
Feb. 15:					3:00 a. m.-----		9.40	.0764	.0820	7:40 a. m.-----		1.70	.0138	.2026
12:20 a. m.-----		.46	.0037	.0071	3:05 a. m.-----		9.40	.0764	.0884	8:00 a. m.-----		1.66	.0135	.2071
12:40 a. m.-----		.58	.0047	.0085	3:10 a. m.-----		8.90	.0723	.0946	8:20 a. m.-----		1.57	.0128	.2115
12:50 a. m.-----		.68	.0055	.0093	3:20 a. m.-----		7.15	.0581	.1055	8:40 a. m.-----		1.48	.0120	.2156
1:00 a. m.-----		.77	.0062	.0103	3:25 a. m.-----		6.53	.0531	.1101	9:00 a. m.-----		1.44	.0117	.2195
1:10 a. m.-----		1.07	.0087	.0115	3:30 a. m.-----		6.03	.0490	.1143	9:20 a. m.-----		1.39	.0113	.2233
1:20 a. m.-----		1.35	.0110	.0131	3:40 a. m.-----		5.08	.0413	.1218	9:40 a. m.-----		1.35	.0110	.2270

¹ Observed flow without corrections for base flow.

TABLE 68.—Run-off from watershed 10 for selected storms, 1939—Continued

Date and time	Discharge	Accumulated run-off	Date and time	Discharge	Accumulated run-off	Date and time	Discharge	Accumulated run-off
STORM OF FEB. 14-15, TOTAL RAINFALL 1.35 INCHES—Continued			STORM OF JUNE 18-19, TOTAL RAINFALL 2.82 INCHES—Continued			STORM OF JULY 8, TOTAL RAINFALL 1.60 INCHES—Continued		
Feb. 15—Con.	Sec.-ft.	In. per hr.	June 18—Con.	Sec.-ft.	In. per hr.	July 8—Con.	Sec.-ft.	In. per hr.
10:00 a. m.	1.31	0.0106	6:00 p. m.	0.159	0.0013	8:10 a. m.	0.99	0.0080
10:20 a. m.	1.31	0.0106	6:20 p. m.	0.139	0.0011	8:15 a. m.	1.48	0.0120
10:40 a. m.	1.23	0.0100	6:40 p. m.	0.139	0.0011	8:20 a. m.	1.75	0.0142
11:00 a. m.	1.23	0.0100	7:00 p. m.	0.159	0.0013	8:23 a. m.	1.80	0.0146
11:20 a. m.	1.19	0.0097	7:15 p. m.	0.201	0.0016	8:30 a. m.	2.43	0.0198
11:40 a. m.	1.19	0.0097	7:18 p. m.	0.246	0.0020	8:40 a. m.	1.93	0.0157
12:00 m.	1.15	0.0093	7:20 p. m.	0.270	0.0022	8:50 a. m.	1.66	0.0135
12:20 p. m.	1.11	0.0090	7:25 p. m.	0.319	0.0026	9:00 a. m.	1.23	0.0100
12:40 p. m.	1.11	0.0090	7:30 p. m.	0.37	0.0030	9:10 a. m.	0.92	0.0075
1:00 p. m.	1.07	0.0087	7:40 p. m.	0.40	0.0032	9:20 a. m.	0.71	0.0058
1:20 p. m.	1.07	0.0087	8:00 p. m.	0.319	0.0026	9:30 a. m.	0.58	0.0047
1:40 p. m.	1.03	0.0084	8:10 p. m.	0.294	0.0024	9:40 a. m.	0.49	0.0040
2:00 p. m.	1.03	0.0084	8:20 p. m.	0.294	0.0024	9:50 a. m.	0.40	0.0032
3:00 p. m.	0.95	0.0077	8:40 p. m.	0.345	0.0028	10:00 a. m.	0.345	0.0028
4:00 p. m.	0.88	0.0072	9:00 p. m.	0.345	0.0028	10:10 a. m.	0.319	0.0026
6:00 p. m.	0.80	0.0065	9:20 p. m.	0.345	0.0028	10:20 a. m.	0.270	0.0022
7:00 p. m.	0.77	0.0062	9:40 p. m.	0.319	0.0026	10:30 a. m.	0.246	0.0020
8:00 p. m.	0.71	0.0058	10:00 p. m.	0.319	0.0026	10:40 a. m.	0.223	0.0018
10:00 p. m.	0.64	0.0052	10:10 p. m.	0.37	0.0030	10:50 a. m.	0.201	0.0016
12:00 p. m.	0.58	0.0047	10:20 p. m.	0.40	0.0032	10:54 a. m.	0.223	0.0018
Feb. 16:			10:30 p. m.	0.40	0.0032	11:00 a. m.	0.201	0.0016
2:00 a. m.	0.51	0.0041	10:40 p. m.	0.40	0.0032	11:10 a. m.	0.201	0.0016
4:30 a. m.	0.46	0.0037	11:00 p. m.	0.345	0.0028	11:20 a. m.	0.201	0.0016
6:00 a. m.	0.43	0.0035	11:20 p. m.	0.37	0.0030	11:30 a. m.	0.179	0.0014
8:00 a. m.	0.40	0.0032	11:40 p. m.	0.40	0.0032	11:40 a. m.	0.179	0.0014
12:00 m.	0.40	0.0032	12:00 p. m.	0.43	0.0035	11:50 a. m.	0.159	0.0013
1:00 p. m.	0.43	0.0035	June 19:			11:58 a. m.	0.139	0.0011
3:00 p. m.	0.40	0.0032	12:10 a. m.	0.51	0.0041	12:00 m.	0.159	0.0013
4:00 p. m.	0.40	0.0032	12:20 a. m.	0.51	0.0041	12:10 p. m.	0.179	0.0014
6:00 p. m.	0.40	0.0032	12:25 a. m.	0.71	0.0058	12:15 p. m.	0.159	0.0013
8:00 p. m.	0.345	0.0028	12:30 a. m.	0.92	0.0075	12:20 p. m.	0.201	0.0016
9:00 p. m.	0.345	0.0028	12:38 a. m.	1.27	0.0103	12:24 p. m.	0.139	0.0011
12:00 p. m.	0.319	0.0026	12:40 a. m.	1.35	0.0110	12:27 p. m.	0.159	0.0013
STORM OF JUNE 18-19, TOTAL RAINFALL 2.82 INCHES			12:50 a. m.	1.57	0.0128	12:30 p. m.	0.139	0.0011
June 18:			1:00 a. m.	1.57	0.0128	12:40 p. m.	0.159	0.0013
7:40 a. m.	0.030	0.0002	1:05 a. m.	1.62	0.0132	12:45 p. m.	0.159	0.0013
8:50 a. m.	0.030	0.0002	1:14 a. m.	1.88	0.0153	12:47 p. m.	0.139	0.0011
8:55 a. m.	0.042	0.0003	1:20 a. m.	2.03	0.0165	12:50 p. m.	0.201	0.0016
8:56 a. m.	0.055	0.0004	1:25 a. m.	2.08	0.0169	12:52 p. m.	0.345	0.0028
8:58 a. m.	0.070	0.0006	1:35 a. m.	2.13	0.0173	12:54 p. m.	0.61	0.0050
8:59 a. m.	0.086	0.0007	1:40 a. m.	2.13	0.0173	12:56 p. m.	0.99	0.0080
9:00 a. m.	0.086	0.0007	1:50 a. m.	2.03	0.0165	12:57 p. m.	1.62	0.0132
9:05 a. m.	0.102	0.0008	2:00 a. m.	1.88	0.0153	12:58 p. m.	2.48	0.0202
9:10 a. m.	0.120	0.0010	2:20 a. m.	1.52	0.0124	12:59 p. m.	3.18	0.0258
9:20 a. m.	0.159	0.0013	2:40 a. m.	1.23	0.0100	1:00 p. m.	4.00	0.0325
9:25 a. m.	0.159	0.0013	3:00 a. m.	1.03	0.0084	1:01 p. m.	4.75	0.0386
9:30 a. m.	0.201	0.0016	3:05 a. m.	1.03	0.0084	1:02 p. m.	5.55	0.0451
9:40 a. m.	0.179	0.0014	3:20 a. m.	1.19	0.0097	1:03 p. m.	6.68	0.0543
10:00 a. m.	0.159	0.0013	3:30 a. m.	1.39	0.0113	1:04 p. m.	11.3	0.0918
10:20 a. m.	0.159	0.0013	3:40 a. m.	1.62	0.0132	1:05 p. m.	16.7	0.136
10:40 a. m.	0.159	0.0013	3:50 a. m.	1.88	0.0153	1:06 p. m.	22.9	0.186
11:00 a. m.	0.201	0.0016	4:00 a. m.	2.08	0.0169	1:07 p. m.	29.8	0.242
11:08 a. m.	0.201	0.0016	4:10 a. m.	2.23	0.0181	1:10 p. m.	26.8	0.218
11:12 a. m.	0.246	0.0020	4:20 a. m.	2.28	0.0185	1:15 p. m.	17.9	0.146
11:13 a. m.	0.294	0.0024	4:35 a. m.	2.28	0.0185	1:20 p. m.	12.3	0.100
11:18 a. m.	0.345	0.0028	4:40 a. m.	2.28	0.0185	1:30 p. m.	8.47	0.0688
11:20 a. m.	0.43	0.0035	5:00 a. m.	2.03	0.0165	1:40 p. m.	6.70	0.0545
11:22 a. m.	0.54	0.0044	5:20 a. m.	1.75	0.0142	1:45 p. m.	6.68	0.0543
11:24 a. m.	0.68	0.0053	5:40 a. m.	1.52	0.0124	1:50 p. m.	5.69	0.0462
11:26 a. m.	0.80	0.0065	6:00 a. m.	1.31	0.0106	1:55 p. m.	4.94	0.0402
11:30 a. m.	0.99	0.0080	6:20 a. m.	1.15	0.0093	2:00 p. m.	4.25	0.0345
11:37 a. m.	1.27	0.0103	6:40 a. m.	0.99	0.0080	2:04 p. m.	4.00	0.0325
11:40 a. m.	1.31	0.0106	7:00 a. m.	0.88	0.0072	2:10 p. m.	3.29	0.0267
11:45 a. m.	1.31	0.0106	7:20 a. m.	0.77	0.0062	2:20 p. m.	2.58	0.0210
12:00 m.	1.19	0.0097	7:40 a. m.	0.74	0.0060	2:30 p. m.	2.03	0.0165
12:05 p. m.	1.15	0.0093	8:00 a. m.	0.71	0.0058	2:35 p. m.	1.84	0.0150
12:10 p. m.	1.23	0.0100	8:20 a. m.	0.71	0.0058	2:40 p. m.	1.66	0.0135
12:20 p. m.	1.27	0.0103	9:00 a. m.	0.64	0.0052	2:50 p. m.	1.39	0.0113
12:27 p. m.	1.27	0.0103	10:00 a. m.	0.54	0.0044	3:00 p. m.	1.19	0.0097
12:40 p. m.	1.57	0.0128	11:00 a. m.	0.46	0.0037	3:10 p. m.	1.03	0.0084
12:45 p. m.	1.66	0.0135	12:00 m.	0.40	0.0032	3:20 p. m.	0.88	0.0072
1:00 p. m.	1.27	0.0103	1:00 p. m.	0.345	0.0028	3:30 p. m.	0.77	0.0062
1:15 p. m.	1.03	0.0084	2:00 p. m.	0.294	0.0024	3:40 p. m.	0.71	0.0058
1:25 p. m.	0.95	0.0077	3:00 p. m.	0.246	0.0020	3:50 p. m.	0.64	0.0052
1:40 p. m.	0.80	0.0065	5:00 p. m.	0.201	0.0016	4:00 p. m.	0.61	0.0050
2:00 p. m.	0.61	0.0050	6:00 p. m.	0.179	0.0014	5:00 p. m.	0.43	0.0035
2:20 p. m.	0.49	0.0040	8:00 p. m.	0.159	0.0013	6:00 p. m.	0.319	0.0026
2:40 p. m.	0.40	0.0032	9:30 p. m.	0.139	0.0011	7:00 p. m.	0.270	0.0022
3:00 p. m.	0.345	0.0028	12:00 p. m.	0.120	0.0010	8:00 p. m.	0.223	0.0018
3:20 p. m.	0.294	0.0024	STORM OF JULY 8, TOTAL RAINFALL 1.60 INCHES			9:00 p. m.	0.201	0.0016
3:40 p. m.	0.270	0.0022	July 8:			10:00 p. m.	0.179	0.0014
4:00 p. m.	0.223	0.0018	5:10 a. m. ²	0	0	11:00 p. m.	0.159	0.0013
4:20 p. m.	0.201	0.0016	7:40 a. m.	0	0	12:00 p. m.	0.159	0.0013
4:40 p. m.	0.179	0.0014	7:42 a. m.	0	0	July 9:		
5:00 p. m.	0.179	0.0014	7:50 a. m.	0.201	0.0016	3:00 a. m.	0.139	0.0011
5:20 p. m.	0.159	0.0013	7:51 a. m.	0.345	0.0028	6:00 a. m.	0.120	0.0010
5:40 p. m.	0.159	0.0013	7:55 a. m.	0.49	0.0040	9:00 a. m.	0.102	0.0008
			8:00 a. m.	0.49	0.0040	12:00 m.	0.086	0.0007
			8:05 a. m.	0.71	0.0058	3:00 p. m.	0.070	0.0006
						6:00 p. m.	0.005	0.0004
						7:00 p. m.	0.055	0.0004
						12:00 p. m.	0.055	0.0004

² Rain began.³ Rain ended.

TABLE 68.—Run-off from watershed 10 for selected storms, 1939—Continued

Date and time	Discharge	Accumulated run-off	Date and time	Discharge	Accumulated run-off	Date and time	Discharge	Accumulated run-off
STORM OF OCTOBER 25-27, TOTAL RAIN-FALL 4.23 INCHES			STORM OF OCTOBER 25-27, TOTAL RAIN-FALL 4.23 INCHES—Continued			STORM OF OCTOBER 25-27, TOTAL RAIN-FALL 4.23 INCHES—Continued		
Oct. 25:			Oct. 26—Con.	Sec.-ft.	In. per hr.	Oct. 27—Con.	Sec.-ft.	In. per hr.
4:20 a. m. ²	0	0	7:40 a. m.	0.010	0.0001	6:20 a. m.	0.64	0.0052
2:00 p. m.	T	0	8:00 a. m.	.010	.0001	6:25 a. m.	.64	.0052
2:20 p. m.	.004	T	8:20 a. m.	.010	.0001	6:40 a. m.	.61	.0050
2:40 p. m.	.010	.0001	8:36 a. m.	.019	.0002	7:00 a. m.	.49	.0040
3:00 p. m.	.010	.0001	8:38 a. m.	.042	.0003	7:20 a. m.	.37	.0030
3:20 p. m.	.019	.0002	8:40 a. m.	.070	.0006	7:30 a. m.	.319	.0026
3:40 p. m.	.019	.0002	8:41 a. m.	.086	.0007	7:40 a. m.	.294	.0024
4:00 p. m.	.019	.0002	8:42 a. m.	.294	.0024	8:00 a. m.	.246	.0020
4:10 p. m.	.030	.0002	8:43 a. m.	.77	.0063	8:15 a. m.	.270	.0022
4:20 p. m.	.042	.0003	8:44 a. m.	1.57	.0128	8:20 a. m.	.319	.0026
4:30 p. m.	.070	.0006	8:45 a. m.	2.58	.0210	8:22 a. m.	.37	.0030
4:34 p. m.	.102	.0008	8:46 a. m.	6.70	.0545	8:26 a. m.	.46	.0037
4:40 p. m.	.139	.0011	8:48 a. m.	7.15	.0581	8:30 a. m.	.58	.0047
4:45 p. m.	.201	.0016	8:50 a. m.	8.90	.0723	8:40 a. m.	.68	.0055
4:50 p. m.	.246	.0020	8:54 a. m.	9.40	.0764	8:44 a. m.	.71	.0058
5:00 p. m.	.270	.0022	8:56 a. m.	10.3	.0837	8:54 a. m.	.74	.0060
5:20 p. m.	.223	.0018	8:58 a. m.	9.40	.0764	9:00 a. m.	.68	.0055
5:30 p. m.	.223	.0018	9:00 a. m.	7.58	.0616	9:10 a. m.	.54	.0044
5:40 p. m.	.201	.0016	9:02 a. m.	6.70	.0545	9:20 a. m.	.49	.0040
6:00 p. m.	.159	.0013	9:05 a. m.	6.46	.0525	9:28 a. m.	.46	.0037
6:20 p. m.	.179	.0015	9:10 a. m.	5.28	.0429	9:32 a. m.	.51	.0042
6:40 p. m.	.179	.0015	9:15 a. m.	4.25	.0346	9:37 a. m.	.64	.0052
7:00 p. m.	.159	.0013	9:20 a. m.	3.07	.0250	9:40 a. m.	.80	.0065
7:20 p. m.	.120	.0010	9:25 a. m.	2.33	.0189	9:45 a. m.	.95	.0077
7:35 p. m.	.086	.0007	9:30 a. m.	1.84	.0150	9:50 a. m.	1.07	.0087
7:40 p. m.	.070	.0006	9:35 a. m.	1.44	.0117	10:00 a. m.	1.31	.0106
8:00 p. m.	.055	.0004	9:40 a. m.	1.15	.0094	10:20 a. m.	.99	.0080
8:20 p. m.	.042	.0003	9:50 a. m.	.88	.0072	10:40 a. m.	.80	.0065
8:40 p. m.	.042	.0003	10:00 a. m.	.77	.0063	11:00 a. m.	.68	.0055
9:00 p. m.	.030	.0002	10:10 a. m.	.68	.0055	11:20 a. m.	.58	.0047
9:20 p. m.	.030	.0002	10:20 a. m.	.58	.0047	11:40 a. m.	.49	.0040
9:40 p. m.	.019	.0002	10:30 a. m.	.49	.0040	12:00 m.	.40	.0032
10:00 p. m.	.019	.0002	10:40 a. m.	.40	.0032	12:20 p. m.	.345	.0028
10:20 p. m.	.019	.0002	10:53 a. m.	.319	.0026	12:40 p. m.	.294	.0024
10:30 p. m.	.019	.0002	11:00 a. m.	.270	.0022	1:00 p. m.	.270	.0022
10:40 p. m.	.042	.0003	11:14 a. m.	.223	.0018	1:20 p. m.	.223	.0018
10:48 p. m.	.070	.0006	11:20 a. m.	.201	.0016	1:35 p. m.	.223	.0018
10:50 p. m.	.102	.0008	11:40 a. m.	.159	.0013	1:40 p. m.	.246	.0020
10:52 p. m.	.139	.0011	12:00 m.	.120	.0010	1:45 p. m.	.246	.0020
10:54 p. m.	.179	.0015	12:20 p. m.	.102	.0008	1:46 p. m.	.294	.0024
10:55 p. m.	.223	.0018	12:40 p. m.	.086	.0007	1:50 p. m.	.319	.0026
10:57 p. m.	.270	.0022	1:00 p. m.	.086	.0007	2:00 p. m.	.319	.0026
10:58 p. m.	.319	.0026	1:20 p. m.	.070	.0006	2:20 p. m.	.37	.0030
11:00 p. m.	.345	.0028	1:40 p. m. ³	.070	.0006	2:40 p. m.	.319	.0026
11:02 p. m.	.37	.0030	2:20 p. m.	.055	.0004	3:00 p. m.	.294	.0024
11:05 p. m.	.345	.0028	3:40 p. m.	.042	.0003	3:20 p. m.	.270	.0022
11:13 p. m.	.46	.0037	6:00 p. m.	.030	.0002	3:40 p. m.	.270	.0022
11:20 p. m.	.43	.0035	7:30 p. m.	.030	.0002	4:00 p. m.	.270	.0022
11:25 p. m.	.37	.0030	10:30 p. m.	.019	.0002	4:20 p. m.	.246	.0020
11:30 p. m.	.319	.0026	12:00 p. m.	.019	.0002	4:40 p. m.	.223	.0018
11:34 p. m.	.270	.0022	Oct. 27:			5:00 p. m.	.201	.0016
11:38 p. m.	.223	.0018	3:50 a. m. ²	.019	.0002	5:20 p. m.	.201	.0016
11:40 p. m.	.201	.0016	4:00 a. m.	.019	.0002	5:40 p. m.	.201	.0016
11:50 p. m.	.159	.0013	4:15 a. m.	.030	.0002	6:00 p. m.	.179	.0015
12:00 p. m.	.120	.0010	4:20 a. m.	.042	.0003	6:20 p. m.	.179	.0015
Oct. 26:			4:25 a. m.	.055	.0004	6:40 p. m.	.159	.0013
12:15 a. m.	.086	.0007	4:40 a. m.	.070	.0006	7:00 p. m.	.159	.0013
12:20 a. m.	.070	.0006	4:44 a. m.	.086	.0007	7:20 p. m.	.139	.0011
12:40 a. m.	.055	.0004	4:45 a. m.	.102	.0008	7:40 p. m.	.139	.0011
1:00 a. m.	.042	.0003	4:46 a. m.	.120	.0010	8:00 p. m. ³	.120	.0010
1:20 a. m.	.042	.0003	4:48 a. m.	.159	.0013	8:30 p. m.	.120	.0010
1:40 a. m.	.042	.0003	4:50 a. m.	.201	.0016	9:40 p. m.	.102	.0008
2:00 a. m.	.030	.0002	4:52 a. m.	.246	.0020	11:00 p. m.	.086	.0007
2:20 a. m.	.042	.0003	4:53 a. m.	.294	.0024	12:00 p. m.	.086	.0007
2:40 a. m.	.042	.0003	4:54 a. m.	.345	.0028	Oct. 28:		
3:00 a. m.	.042	.0003	4:58 a. m.	.46	.0037	12:30 a. m.	.070	.0006
3:20 a. m.	.030	.0002	5:00 a. m.	.58	.0047	3:30 a. m.	.070	.0006
3:40 a. m.	.030	.0002	5:01 a. m.	.71	.0058	4:00 a. m.	.055	.0004
4:00 a. m.	.030	.0002	5:05 a. m.	1.03	.0084	5:30 a. m.	.055	.0004
4:20 a. m.	.030	.0002	5:10 a. m.	1.31	.0106	8:00 a. m.	.055	.0003
4:40 a. m.	.019	.0002	5:15 a. m.	1.52	.0124	10:30 a. m.	.042	.0003
5:00 a. m.	.019	.0002	5:20 a. m.	1.48	.0120	12:00 m.	.030	.0002
5:20 a. m.	.019	.0002	5:22 a. m.	1.39	.0113	1:30 p. m.	.030	.0002
5:40 a. m.	.019	.0002	5:26 a. m.	1.48	.0120	3:00 p. m.	.019	.0002
6:00 a. m.	.019	.0002	5:35 a. m.	1.31	.0106	5:00 p. m.	.019	.0002
6:20 a. m.	.019	.0002	5:40 a. m.	1.11	.0090	6:00 p. m.	.042	.0002
6:40 a. m.	.010	.0001	5:50 a. m.	.84	.0068	7:00 p. m.	.042	.0002
7:00 a. m.	.010	.0001	6:00 a. m.	.68	.0055	9:00 p. m.	.019	.0002
7:20 a. m.	.010	.0001	6:15 a. m.	.61	.0050	12:00 p. m.	.019	.0002

² Rain began.³ Rain ended.

TABLE 69.—Run-off from watershed 11 for selected storms, 1939

[Area 292 acres; rainfall measured at recording rain gage 14]

STORM OF FEB. 14-15, TOTAL RAINFALL 1.37 INCHES				STORM OF JUNE 18-19, TOTAL RAINFALL 2.82 INCHES—Continued				STORM OF JUNE 18-19, TOTAL RAINFALL 2.82 INCHES—Continued			
Date and time	Discharge ¹	Accumulated run-off		Date and time	Discharge ¹	Accumulated run-off		Date and time	Discharge ¹	Accumulated run-off	
Feb. 14:				June 18—Con.				June 19—Con.			
8:20 p. m.-----	0.562	0.0019	0	8:00 a. m.-----	0.025	0.0001	0	4:30 a. m.-----	5.18	0.0176	0.0950
8:40 p. m.-----	.562	.0019	.0006	8:20 a. m.-----	.031	.0001	0	4:40 a. m.-----	5.38	.0183	.0980
9:00 p. m.-----	.591	.0020	.0013	8:40 a. m.-----	.039	.0001	0	5:00 a. m.-----	4.62	.0157	.1037
9:20 p. m.-----	.620	.0021	.0020	8:50 a. m.-----	.043	.0001	0	5:20 a. m.-----	4.01	.0136	.1086
9:40 p. m.-----	.620	.0021	.0027	8:55 a. m.-----	.047	.0002	0	5:40 a. m.-----	3.55	.0120	.1129
10:00 p. m.-----	.656	.0022	.0034	9:00 a. m.-----	.056	.0002	0	6:00 a. m.-----	3.13	.0106	.1167
10:20 p. m.-----	.656	.0022	.0041	9:10 a. m.-----	.071	.0002	0	6:20 a. m.-----	2.75	.0093	.1200
10:40 p. m.-----	.692	.0024	.0049	9:20 a. m.-----	.083	.0003	0	6:40 a. m.-----	2.43	.0082	.1229
11:00 p. m.-----	.764	.0026	.0057	9:30 a. m.-----	.104	.0004	0	7:00 a. m.-----	2.12	.0072	.1255
11:20 p. m.-----	.800	.0027	.0066	9:40 a. m.-----	.121	.0004	.0001	7:20 a. m.-----	1.94	.0066	.1278
11:40 p. m.-----	.896	.0030	.0075	9:50 a. m.-----	.141	.0005	.0002	7:40 a. m.-----	1.77	.0060	.1299
12:00 p. m.-----	.992	.0034	.0086	10:00 a. m.-----	.177	.0006	.0003	8:00 a. m.-----	1.77	.0060	.1319
Feb. 15:				10:10 a. m.-----	.219	.0007	.0004	8:20 a. m.-----	1.68	.0057	.1338
12:20 a. m.-----	1.15	.0039	.0098	10:20 a. m.-----	.267	.0009	.0005	8:40 a. m.-----	1.61	.0055	.1357
12:40 a. m.-----	1.32	.0045	.0112	10:30 a. m.-----	.358	.0012	.0007	9:00 a. m.-----	1.61	.0055	.1375
1:00 a. m.-----	1.61	.0055	.0129	10:35 a. m.-----	.428	.0014	.0008	9:20 a. m.-----	1.54	.0052	.1393
1:20 a. m.-----	2.22	.0075	.0151	10:40 a. m.-----	.504	.0017	.0009	9:40 a. m.-----	1.54	.0052	.1410
1:30 a. m.-----	2.75	.0093	.0165	10:45 a. m.-----	.656	.0022	.0011	10:00 a. m.-----	1.46	.0050	.1427
1:40 a. m.-----	3.40	.0115	.0182	11:00 a. m.-----	.692	.0024	.0017	10:20 a. m.-----	1.39	.0047	.1443
1:45 a. m.-----	4.16	.0141	.0193	11:05 a. m.-----	.728	.0025	.0019	10:40 a. m.-----	1.32	.0045	.1458
1:50 a. m.-----	4.77	.0162	.0206	11:10 a. m.-----	.800	.0027	.0021	10:50 a. m.-----	1.32	.0045	.1466
1:55 a. m.-----	5.78	.0196	.0221	11:20 a. m.-----	1.10	.0037	.0026	12:00 m.-----	1.15	.0039	.1473
2:00 a. m.-----	6.80	.0231	.0239	11:25 a. m.-----	1.32	.0045	.0029	1:00 p. m.-----	1.04	.0035	.1510
2:05 a. m.-----	8.10	.0275	.0260	11:30 a. m.-----	1.77	.0060	.0038	2:00 p. m.-----	.896	.0030	.1542
2:10 a. m.-----	9.40	.0319	.0285	11:40 a. m.-----	1.94	.0066	.0043	3:00 p. m.-----	.848	.0029	.1572
2:20 a. m.-----	12.3	.0418	.0346	11:55 a. m.-----	2.22	.0075	.0061	4:00 p. m.-----	.764	.0026	.1600
2:25 a. m.-----	14.2	.0482	.0384	12:00 m.-----	2.63	.0089	.0068	5:00 p. m.-----	.692	.0024	.1625
2:40 a. m.-----	16.7	.0567	.0515	12:05 p. m.-----	3.13	.0106	.0076	6:30 p. m.-----	.591	.0020	.1658
3:00 a. m.-----	20.1	.0682	.0723	12:15 p. m.-----	3.40	.0115	.0094	8:30 p. m.-----	.553	.0018	.1696
3:10 a. m.-----	21.1	.0716	.0839	12:20 p. m.-----	3.55	.0120	.0104	10:30 p. m.-----	.475	.0016	.1730
3:20 a. m.-----	19.6	.0666	.0954	12:30 p. m.-----	4.01	.0136	.0125	12:00 p. m.-----	.452	.0015	.1754
3:40 a. m.-----	14.2	.0482	.1145	12:40 p. m.-----	4.01	.0136	.0148	June 20:			
4:00 a. m.-----	11.3	.0384	.1289	1:00 p. m.-----	3.25	.0110	.0189	1:00 a. m.-----	.428	.0014	.1768
4:20 a. m.-----	9.40	.0319	.1406	1:20 p. m.-----	2.63	.0089	.0222	2:30 a. m.-----	.405	.0014	.1789
4:40 a. m.-----	8.36	.0284	.1507	1:30 p. m.-----	2.63	.0089	.0237	4:00 a. m.-----	.381	.0013	.1810
5:00 a. m.-----	7.84	.0266	.1599	1:40 p. m.-----	2.53	.0086	.0252	5:00 a. m.-----	.381	.0013	.1823
5:20 a. m.-----	7.06	.0240	.1683	2:00 p. m.-----	2.03	.0069	.0278	7:30 a. m.-----	.358	.0012	.1853
5:40 a. m.-----	6.80	.0231	.1762	2:10 p. m.-----	1.68	.0057	.0288	9:00 a. m.-----	.340	.0012	.1871
6:00 a. m.-----	6.39	.0217	.1837	2:20 p. m.-----	1.46	.0050	.0297	10:30 a. m.-----	.322	.0011	.1889
6:20 a. m.-----	5.99	.0203	.1907	2:40 p. m.-----	1.10	.0037	.0312	12:30 p. m.-----	.285	.0010	.1909
6:40 a. m.-----	5.78	.0196	.1974	3:00 p. m.-----	.896	.0030	.0323	2:00 p. m.-----	.251	.0008	.1923
7:00 a. m.-----	5.58	.0189	.2038	3:20 p. m.-----	.764	.0026	.0332	4:00 p. m.-----	.219	.0007	.1939
7:20 a. m.-----	5.18	.0176	.2099	3:40 p. m.-----	.656	.0022	.0340	6:00 p. m.-----	.204	.0007	.1953
7:40 a. m.-----	4.97	.0169	.2156	4:00 p. m.-----	.562	.0019	.0347	8:00 p. m.-----	.190	.0006	.1966
8:00 a. m.-----	4.77	.0162	.2211	4:20 p. m.-----	.504	.0017	.0353	10:00 p. m.-----	.190	.0006	.1979
8:20 a. m.-----	4.62	.0152	.2263	4:40 p. m.-----	.452	.0015	.0358	12:00 p. m.-----	.177	.0006	.1991
8:40 a. m.-----	4.47	.0157	.2314	5:00 p. m.-----	.428	.0014	.0363	STORM OF JULY 8, TOTAL RAINFALL 1.30 INCHES			
9:00 a. m.-----	4.47	.0152	.2365	5:20 p. m.-----	.405	.0014	.0368	July 8:			
9:20 a. m.-----	4.31	.0156	.2416	5:40 p. m.-----	.381	.0013	.0373	5:04 a. m. ² -----	0.052	0.0002	0
9:40 a. m.-----	4.16	.0141	.2465	6:00 p. m.-----	.358	.0012	.0377	5:10 a. m.-----	.071	.0002	0
10:00 a. m.-----	4.01	.0136	.2511	6:20 p. m.-----	.340	.0012	.0381	5:20 a. m.-----	.089	.0003	0
10:20 a. m.-----	4.01	.0136	.2556	6:40 p. m.-----	.340	.0012	.0385	5:25 a. m.-----	.096	.0003	0
10:40 a. m.-----	3.86	.0131	.2601	7:00 p. m.-----	.340	.0012	.0389	5:40 a. m.-----	.096	.0003	.0001
11:00 a. m.-----	3.86	.0131	.2645	7:20 p. m.-----	.405	.0014	.0393	6:00 a. m.-----	.096	.0003	.0002
11:20 a. m.-----	3.71	.0126	.2688	7:40 p. m.-----	.533	.0018	.0398	6:20 a. m.-----	.089	.0003	.0003
11:40 a. m.-----	3.55	.0120	.2729	8:00 p. m.-----	.656	.0022	.0405	6:40 a. m.-----	.083	.0003	.0004
12:00 m.-----	3.55	.0120	.2769	8:15 p. m.-----	.728	.0025	.0411	7:00 a. m.-----	.083	.0003	.0005
12:20 p. m.-----	3.55	.0120	.2809	8:20 p. m.-----	.800	.0027	.0413	7:20 a. m.-----	.080	.0003	.0006
12:40 p. m.-----	3.86	.0131	.2851	8:25 p. m.-----	.992	.0034	.0415	7:35 a. m.-----	.080	.0003	.0007
1:00 p. m.-----	3.40	.0115	.2892	8:40 p. m.-----	1.10	.0037	.0424	7:40 a. m.-----	.112	.0004	.0007
1:20 p. m.-----	3.40	.0115	.2930	9:00 p. m.-----	1.15	.0039	.0437	7:50 a. m.-----	.204	.0007	.0008
1:40 p. m.-----	3.25	.0110	.2967	9:20 p. m.-----	1.04	.0035	.0449	8:00 a. m.-----	.351	.0013	.0010
2:00 p. m.-----	3.25	.0110	.3004	9:40 p. m.-----	.944	.0032	.0460	8:05 a. m.-----	.692	.0024	.0012
3:00 p. m.-----	3.13	.0106	.3112	10:00 p. m.-----	.896	.0030	.0470	8:10 a. m.-----	.944	.0032	.0014
4:00 p. m.-----	3.00	.0102	.3216	10:20 p. m.-----	.896	.0030	.0480	8:20 a. m.-----	1.46	.0050	.0021
6:00 p. m.-----	2.75	.0093	.3412	10:40 p. m.-----	.896	.0030	.0490	8:30 a. m.-----	1.39	.0047	.0029
7:00 p. m.-----	2.63	.0089	.3503	11:00 p. m.-----	.896	.0030	.0500	8:40 a. m.-----	1.46	.0050	.0037
9:00 p. m.-----	2.32	.0079	.3671	11:20 p. m.-----	.896	.0030	.0510	8:45 a. m.-----	1.39	.0047	.0041
11:00 p. m.-----	2.12	.0072	.3823	11:40 p. m.-----	.992	.0034	.0521	9:00 a. m.-----	1.50	.0051	.0053
12:00 p. m.-----	2.03	.0069	.3893	12:00 p. m.-----	.992	.0034	.0532	9:20 a. m.-----	1.26	.0043	.0069
Feb. 16:				June 19:				9:40 a. m.-----			
1:00 a. m.-----	1.94	.0066	.3961	12:20 a. m.-----	1.10	.0037	.0544	9:40 a. m.-----	.992	.0034	.0082
2:30 a. m.-----	1.86	.0063	.4057	12:30 a. m.-----	1.32	.0045	.0551	10:00 a. m.-----	.764	.0026	.0092
3:30 a. m.-----	1.77	.0060	.4119	12:40 a. m.-----	1.54	.0052	.0559	11:20 a. m.-----	.591	.0020	.0100
4:30 a. m.-----	1.68	.0057	.4177	12:50 a. m.-----	1.86	.0063	.0569	11:40 a. m.-----	.475	.0016	.0106
6:00 a. m.-----	1.61	.0055	.4261	1:00 a. m.-----	2.12	.0072	.0580	11:20 a. m.-----	.381	.0013	.0111
8:00 a. m.-----	1.46	.0050	.4365	1:10 a. m.-----	2.75	.0093	.0594	11:40 a. m.-----	.358	.0012	.0116
3:00 p. m.-----	1.46	.0050	.4715	1:20 a. m.-----	3.25	.0110	.0611	12:00 m.-----	.340	.0012	.0120
5:00 p. m.-----	1.39	.0077	.4843	1:30 a. m.-----	3.86	.0131	.0631	12:20 p. m.-----	.322	.0011	.0128
9:00 p. m.-----	1.26	.0043	.5083	1:40 a. m.-----	4.16	.0141	.0654	12:40 p. m.-----	.303	.0010	.0131
12:00 p. m.-----	1.21	.0041	.5209	2:00 a. m.-----	3.86	.0131	.0699	12:50 p. m.-----	.381	.0013	.0133
STORM OF JUNE 18-19, TOTAL RAINFALL 2.82 INCHES				2:20 a. m.-----	3.25	.0110	.0739	12:52 p. m.-----	.533	.0018	.0134
June 18:				2:40 a. m.-----	2.63	.0089	.0772	12:55 p. m.-----	.800	.0027	.0135
7:30 a. m.-----	0.022	0.0001	0	3:00 a. m.-----	2.22	.0075					

¹ Observed flow without corrections for base flow.² Rain began.

TABLE 69.—Run-off from watershed 11 for selected storms, 1939—Continued

STORM OF JULY 8, TOTAL RAINFALL 1.30 INCHES—Continued				STORM OF OCT. 25-27, TOTAL RAINFALL 3.95 INCHES—Continued				STORM OF OCT. 25-27, TOTAL RAINFALL 3.95 INCHES—Continued			
Date and time	Discharge	Accumulated run-off		Date and time	Discharge	Accumulated run-off		Date and time	Discharge	Accumulated run-off	
STORM OF JULY 8, TOTAL RAINFALL 1.30 INCHES—Continued				STORM OF OCT. 25-27, TOTAL RAINFALL 3.95 INCHES—Continued				STORM OF OCT. 25-27, TOTAL RAINFALL 3.95 INCHES—Continued			
July 8—Con.	Sec.-ft.	In. per hr.	In.	Oct. 25—Con.	Sec.-ft.	In. per hr.	In.	Oct. 26—Con.	Sec.-ft.	In. per hr.	In.
1:02 p. m.	3.25	0.0110	0.0142	4:00 p. m.	0.267	0.0009	0.0014	9:50 a. m.	7.58	0.0257	0.0749
1:03 p. m.	4.77	.0162	.0144	4:20 p. m.	.285	.0010	.0017	9:55 a. m.	6.19	.0120	.0769
1:05 p. m.	6.80	.0231	.0151	4:40 p. m.	.340	.0012	.0021	10:00 a. m.	5.18	.0176	.0785
1:10 p. m.	10.7	.0363	.0176	5:00 p. m.	.452	.0015	.0026	10:10 a. m.	3.86	.0131	.0811
1:15 p. m.	15.1	.0513	.0212	5:05 p. m.	.562	.0019	.0027	10:20 a. m.	2.88	.0098	.0830
1:20 p. m.	19.6	.0666	.0261	5:10 p. m.	.692	.0024	.0029	10:30 a. m.	2.12	.0072	.0844
1:22 p. m.	27.6	.0937	.0288	5:20 p. m.	.764	.0026	.0033	10:40 a. m.	1.68	.0057	.0855
1:28 p. m.	34.0	.116	.0393	5:25 p. m.	.800	.0027	.0035	10:50 a. m.	1.39	.0047	.0864
1:40 p. m.	24.0	.0815	.0590	5:40 p. m.	.764	.0026	.0041	11:00 a. m.	1.21	.0041	.0871
1:50 p. m.	16.7	.0567	.0705	6:00 p. m.	.764	.0026	.0050	11:20 a. m.	.896	.0030	.0883
2:00 p. m.	12.6	.0428	.0788	6:05 p. m.	1.04	.0035	.0052	11:40 a. m.	.728	.0025	.0892
2:10 p. m.	10.0	.0340	.0852	6:10 p. m.	1.15	.0039	.0055	12:00 m.	.620	.0021	.0900
2:20 p. m. ³	7.58	.0257	.0901	6:20 p. m.	1.15	.0039	.0061	12:20 p. m.	.533	.0018	.0907
2:40 p. m.	5.18	.0176	.0973	6:30 p. m.	1.15	.0039	.0067	12:40 p. m.	.428	.0014	.0912
3:00 p. m.	4.01	.0136	.1025	6:40 p. m.	1.15	.0039	.0073	1:00 p. m.	.381	.0013	.0917
3:20 p. m.	3.25	.0110	.1066	7:00 p. m.	1.04	.0035	.0085	1:20 p. m.	.340	.0012	.0921
3:40 p. m.	2.63	.0089	.1099	7:20 p. m.	.896	.0030	.0096	1:40 p. m. ³	.303	.0010	.0925
4:00 p. m.	2.22	.0075	.1126	7:40 p. m.	.764	.0026	.0105	2:00 p. m.	.267	.0009	.0928
5:00 p. m.	1.68	.0057	.1192	8:00 p. m.	.656	.0022	.0113	3:00 p. m.	.204	.0007	.0936
6:00 p. m.	1.32	.0045	.1243	8:20 p. m.	.562	.0019	.0120	4:00 p. m.	.164	.0006	.0942
7:00 p. m.	1.15	.0039	.1285	8:40 p. m.	.504	.0017	.0126	5:20 p. m.	.141	.0005	.0949
10:00 p. m.	.848	.0029	.1387	9:00 p. m.	.428	.0014	.0131	7:00 p. m.	.112	.0004	.0956
12:00 p. m.	.728	.0025	.1441	9:20 p. m.	.358	.0012	.0135	8:30 p. m.	.096	.0003	.0961
July 9:				9:40 p. m.	.322	.0011	.0139	10:10 p. m.	.083	.0003	.0966
3:00 a. m.	.620	.0021	.1510	10:00 p. m.	.285	.0010	.0142	11:30 p. m.	.077	.0003	.0970
6:00 a. m.	.533	.0018	.1570	10:20 p. m.	.251	.0008	.0145	12:00 p. m.	.071	.0002	.0971
8:00 a. m.	.475	.0016	.1604	10:40 p. m.	.219	.0007	.0148	Oct. 27:			
12:00 a. m.	.381	.0013	.1660	10:50 p. m.	.267	.0009	.0149	12:40 a. m.	.071	.0002	.0973
3:00 p. m.	.303	.0010	.1696	11:00 p. m.	.322	.0011	.0151	2:20 a. m.	.066	.0002	.0977
6:00 p. m.	.267	.0009	.1725	11:10 p. m.	.405	.0014	.0153	3:50 a. m. ²	.061	.0002	.0980
9:00 p. m.	.251	.0008	.1751	11:20 p. m.	.504	.0017	.0156	4:00 a. m.	.061	.0002	.0980
12:00 p. m.	.243	.0008	.1776	11:30 p. m.	.591	.0020	.0159	4:20 a. m.	.061	.0002	.0981
				11:40 p. m.	.620	.0021	.0162	4:40 a. m.	.071	.0002	.0982
				11:50 p. m.	.692	.0024	.0166	4:50 a. m.	.083	.0003	
				11:55 p. m.	.944	.0032	.0168	4:55 a. m.	.096	.0003	
				11:58 p. m.	1.32	.0045	.0170	4:59 a. m.	.131	.0004	
				12:00 p. m.	1.46	.0050	.0172	5:00 a. m.	.152	.0005	
				Oct. 26:				5:02 a. m.	.204	.0007	
				12:05 a. m.	1.46	.0050	.0176	5:03 a. m.	.267	.0009	
				12:20 a. m.	1.26	.0043	.0188	5:06 a. m.	.340	.0012	
				12:30 a. m.	1.10	.0037	.0195	5:08 a. m.	.428	.0014	
				12:40 a. m.	1.04	.0035	.0201	5:10 a. m.	.562	.0019	.0983
				1:00 a. m.	.800	.0027	.0211	5:13 a. m.	.764	.0026	.0984
				1:20 a. m.	.620	.0021	.0219	5:17 a. m.	1.04	.0035	.0986
				1:40 a. m.	.504	.0017	.0225	5:20 a. m.	1.32	.0045	.0988
				2:00 a. m.	.428	.0014	.0230	5:25 a. m.	1.77	.0060	.0992
				2:20 a. m.	.358	.0012	.0234	5:30 a. m.	2.03	.0069	.0997
				2:40 a. m.	.322	.0011	.0238	5:35 a. m.	2.03	.0069	.1003
				3:00 a. m.	.285	.0010	.0241	5:40 a. m.	2.53	.0086	.1009
				3:20 a. m.	.251	.0008	.0244	5:45 a. m.	3.55	.0120	.1018
				3:40 a. m.	.219	.0007	.0247	5:48 a. m.	4.77	.0162	.1025
				4:00 a. m.	.204	.0007	.0249	5:50 a. m.	5.99	.0203	.1031
				4:20 a. m.	.177	.0006	.0251	5:58 a. m.	7.06	.0240	.1061
				4:40 a. m.	.164	.0006	.0253	6:00 a. m.	6.80	.0231	.1069
				5:00 a. m.	.152	.0005	.0255	6:10 a. m.	5.78	.0196	.1105
				5:20 a. m.	.141	.0005	.0257	6:20 a. m.	4.47	.0152	.1134
				5:40 a. m.	.131	.0004	.0259	6:30 a. m.	3.40	.0115	.1156
				6:00 a. m.	.131	.0004	.0260	6:40 a. m.	2.75	.0093	.1173
				6:20 a. m.	.121	.0004	.0261	6:50 a. m.	2.12	.0072	.1187
				6:40 a. m.	.112	.0004	.0262	7:00 a. m.	1.77	.0060	.1198
				7:00 a. m.	.104	.0004	.0263	7:20 a. m.	1.32	.0045	.1215
				7:20 a. m.	.104	.0004	.0264	7:40 a. m.	1.04	.0035	.1228
				7:40 a. m.	.096	.0003	.0265	8:00 a. m.	.896	.0030	.1239
				8:00 a. m.	.089	.0003	.0266	8:10 a. m.	.848	.0029	.1244
				8:20 a. m.	.089	.0003	.0267	8:20 a. m.	.896	.0030	.1249
				8:32 a. m.	.083	.0003		8:40 a. m.	1.04	.0035	.1260
				8:35 a. m.	.096	.0003		9:00 a. m.	1.15	.0039	.1272
				8:38 a. m.	.131	.0004		9:10 a. m.	1.21	.0041	.1279
				8:40 a. m.	.190	.0006		9:20 a. m.	1.21	.0041	.1286
				8:41 a. m.	.251	.0008		9:30 a. m.	1.46	.0050	.1294
				8:42 a. m.	.322	.0011		9:40 a. m.	1.68	.0057	.1303
				8:43 a. m.	.475	.0016		9:50 a. m.	2.03	.0069	.1313
				8:44 a. m.	.656	.0022		10:00 a. m.	2.22	.0075	.1325
				8:45 a. m.	.800	.0027		10:10 a. m.	2.53	.0086	.1338
				8:46 a. m.	1.10	.0037	.0268	10:20 a. m.	2.53	.0086	.1352
				8:47 a. m.	1.46	.0050	.0269	10:30 a. m.	3.00	.0102	.1368
				8:48 a. m.	1.94	.0066	.0270	10:40 a. m.	3.25	.0110	.1386
				8:49 a. m.	3.13	.0106	.0271	10:50 a. m.	3.13	.0106	.1404
				8:50 a. m.	6.60	.0224	.0274	11:00 a. m.	2.63	.0089	.1420
				8:52 a. m.	8.62	.0293	.0283	11:20 a. m.	1.94	.0066	.1446
				8:55 a. m.	10.4	.0353	.0299	11:40 a. m.	1.54	.0052	.1466
				9:00 a. m.	12.0	.0408	.0331	12:00 m.	1.26	.0043	.1482
				9:02 a. m.	12.3	.0418	.0345	12:20 p. m.	1.10	.0037	.1495
				9:08 a. m.	10.7	.0363	.0384	12:40 p. m.	.944	.0032	.1506
				9:10 a. m.	14.2	.0482	.0398	1:00 p. m.	.848	.0029	.1516
				9:13 a. m.	20.1	.0682	.0427	1:20 p. m.	.764	.0026	.1525
				9:18 a. m.	23.4	.0795	.0489	1:40 p. m.	.692	.0024	.1533
				9:20 a. m.	23.4	.0795	.0515	2:00 p. m.	.764	.0026	.1541
				9:25 a. m.	19.2	.0652	.0575	2:20 p. m.	.764	.0026	.1550
				9:30 a. m.	15.5	.0526	.0624	2:40 p. m.	.764	.0026	.1559
				9:35 a. m.	13.0	.0441	.0664	3:00 p. m.	.728	.0025	.1568
				9:40 a. m.	10.7	.0363	.0698	3:10 p. m.	.896	.0030	.1573
				9:45 a. m.	8.88	.0302	.0726	3:20 p. m.	.896	.0030	.1578

² Rain began.³ Rain ended.

TABLE 69.—Run-off from watershed 11 for selected storms, 1939—Continued

STORM OF OCT. 25-27, TOTAL RAINFALL 3.95 INCHES—Continued				STORM OF OCT. 25-27, TOTAL RAINFALL 3.95 INCHES—Continued				STORM OF OCT. 25-27, TOTAL RAINFALL 3.95 INCHES—Continued			
Date and time	Discharge	Accumulated run-off		Date and time	Discharge	Accumulated run-off		Date and time	Discharge	Accumulated run-off	
Oct. 27—Con.	Sec.-ft.	In. per hr.	In.	Oct. 27—Con.	Sec.-ft.	In. per hr.	In.	Oct. 28—Con.	Sec.-ft.	In. per hr.	In.
3:40 p. m.-----	0.896	0.0030	0.1588	7:20 p. m.-----	0.504	0.0017	5.1672	6:30 a. m.-----	0.190	0.0006	0.1784
4:00 p. m.-----	.896	.0030	.1598	7:40 p. m.-----	.475	.0016	.1677	8:30 a. m.-----	.190	.0006	.1797
4:20 p. m.-----	.800	.0027	.1607	8:00 p. m. ³ -----	.452	.0015	.1682	9:30 a. m.-----	.177	.0006	.1803
4:40 p. m.-----	.764	.0026	.1616	9:30 p. m.-----	.381	.0013	.1703	11:20 a. m.-----	.152	.0005	.1813
5:00 p. m.-----	.692	.0024	.1624	10:40 p. m.-----	.340	.0012	.1717	12:40 p. m.-----	.141	.0005	.1820
5:20 p. m.-----	.692	.0024	.1632	12:00 p. m.-----	.303	.0010	.1732	2:40 p. m.-----	.131	.0004	.1829
5:40 p. m.-----	.656	.0022	.1640	Oct. 28:				7:00 p. m.-----	.121	.0004	.1847
6:00 p. m.-----	.620	.0021	.1647	1:00 a. m.-----	.267	.0009	.1742	10:00 p. m.-----	.112	.0004	.1859
6:20 p. m.-----	.562	.0019	.1654	2:30 a. m.-----	.235	.0008	.1755	12:00 p. m.-----	.104	.0004	.1866
6:40 p. m.-----	.562	.0019	.1660	3:30 a. m.-----	.219	.0007	.1763				
7:00 p. m.-----	.504	.0017	.1666	5:00 a. m.-----	.204	.0007	.1774				

* Rain ended.

TABLE 70.—Run-off from watershed 13 for selected storms, 1939

[Area 439 acres; rainfall measured at recording rain gages 44, 100, Y101, 102, 103]

Date and time				Discharge ¹				Accumulated run-off			
STORM OF FEB. 14-15, TOTAL RAINFALL 1.24 INCHES				STORM OF FEB. 14-15, TOTAL RAINFALL 1.24 INCHES—Continued				STORM OF JUNE 18-19, TOTAL RAINFALL 2.82 INCHES—Continued			
Feb. 14:				Feb. 15—Con.				June 18—Con.			
Sec.-ft.				Sec.-ft.				Sec.-ft.			
In. per hr.				In. per hr.				In. per hr.			
In.				In.				In.			
8:20 p. m.-----0.7120.00160				2:40 p. m.-----4.940.01120.3603				11:05 a. m.-----1.790.00400.0035			
8:40 p. m.-----.746.0017.0005				3:00 p. m.-----4.76.0108.3640				11:10 a. m.-----2.44.0055.0039			
9:00 p. m.-----.746.0017.0011				4:30 p. m.-----4.43.0100.3796				11:15 a. m.-----3.01.0068.0044			
9:20 p. m.-----.780.0018.0017				6:00 p. m.-----4.10.0093.3940				11:20 a. m.-----3.66.0083.0050			
9:40 p. m.-----.830.0019.0023				7:30 p. m.-----3.80.0086.4075				11:25 a. m.-----4.27.0096.0058			
10:00 p. m.-----.830.0019.0029				9:00 p. m.-----3.53.0080.4199				11:30 a. m.-----5.30.0120.0067			
10:20 p. m.-----.880.0020.0036				9:30 p. m.-----3.39.0076.4238				11:35 a. m.-----7.53.0170.0079			
10:40 p. m.-----.930.0021.0043				11:00 p. m.-----3.13.0071.4349				11:40 a. m.-----8.04.0182.0094			
11:00 p. m.-----.980.0022.0050				12:00 p. m.-----3.01.0068.4419				11:55 a. m.-----8.30.0188.0140			
11:20 p. m.-----1.09.0025.0058				Feb. 16:				12:00 m.-----8.04.0182.0155			
11:40 p. m.-----1.27.0029.0067				1:30 a. m.-----2.77.0062.4517				12:20 p. m.-----7.02.0158.0212			
12:00 p. m.-----1.48.0033.0077				3:10 a. m.-----2.55.0058.4617				12:30 p. m.-----7.27.0164.0239			
Feb. 15:				4:00 a. m.-----2.34.0053.4664				12:40 p. m.-----8.04.0182.0268			
12:20 a. m.-----1.63.0037.0089				5:00 a. m.-----2.13.0048.4714				12:45 p. m.-----8.04.0182.0283			
12:40 a. m.-----2.04.0046.0103				7:00 a. m.-----1.96.0044.4806				12:50 p. m.-----8.04.0182.0298			
1:00 a. m.-----2.65.0060.0121				9:20 a. m.-----1.96.0044.4909				12:55 p. m.-----8.04.0182.0313			
1:20 a. m.-----3.80.0086.0145				11:20 a. m.-----2.23.0050.5003				1:00 p. m.-----7.79.0176.0328			
1:30 a. m.-----5.12.0116.0162				1:00 p. m.-----2.23.0050.5086				1:20 p. m.-----6.10.0138.0380			
1:40 a. m.-----6.32.0143.0184				3:00 p. m.-----2.04.0046.5182				1:40 p. m.-----5.48.0124.0424			
1:50 a. m.-----9.07.0205.0213				5:30 p. m.-----1.96.0044.5294				2:00 p. m.-----4.60.0104.0462			
2:00 a. m.-----11.6.0262.0252				7:00 p. m.-----1.87.0042.5358				2:20 p. m.-----3.94.0089.0494			
2:10 a. m.-----14.6.0330.0301				9:00 p. m.-----1.70.0038.5438				2:40 p. m.-----3.39.0076.0521			
2:20 a. m.-----17.1.0386.0361				11:00 p. m.-----1.63.0037.5514				3:00 p. m.-----2.89.0065.0544			
2:30 a. m.-----20.5.0463.0432				12:00 p. m.-----1.63.0037.5551				3:20 p. m.-----2.65.0060.0565			
2:40 a. m.-----24.4.0551.0516				STORM OF JUNE 18-19, TOTAL RAINFALL 2.82 INCHES				3:40 p. m.-----2.34.0053.0584			
2:50 a. m.-----28.7.0648.0616				June 18:				4:00 p. m.-----2.13.0048.0601			
3:00 a. m.-----31.4.0709.0729				5:30 a. m.-----0.019T0				4:20 p. m.-----1.96.0044.0616			
3:10 a. m.-----33.5.0757.0851				7:30 a. m.-----0.022T.0001				4:40 p. m.-----1.79.0040.0630			
3:20 a. m.-----32.8.0741.0976				7:40 a. m.-----0.025T				5:00 p. m.-----1.70.0038.0643			
3:40 a. m.-----27.3.0617.1202				7:50 a. m.-----0.028T0.0001				5:20 p. m.-----1.63.0037.0656			
4:00 a. m.-----24.4.0551.1397				8:00 a. m.-----0.035.0001				5:40 p. m.-----1.55.0035.0668			
4:20 a. m.-----21.0.0474.1568				8:10 a. m.-----0.043.0001				6:00 p. m.-----1.48.0033.0679			
4:40 a. m.-----18.1.0409.1715				8:15 a. m.-----0.052.0001				6:20 p. m.-----1.40.0032.0690			
5:00 a. m.-----16.2.0366.1844				8:20 a. m.-----0.061.0001				6:40 p. m.-----1.33.0030.0700			
5:20 a. m.-----14.6.0330.1960				8:27 a. m.-----0.071.0002				6:50 p. m.-----1.40.0032.0705			
5:40 a. m.-----13.4.0303.2065				8:40 a. m.-----0.071.0002				7:00 p. m.-----1.55.0035.0711			
6:00 a. m.-----12.6.0285.2163				8:45 a. m.-----0.089.0002				7:20 p. m.-----1.96.0044.0724			
6:20 a. m.-----11.6.0262.2254				8:50 a. m.-----0.089.0002				7:40 p. m.-----2.44.0055.0741			
6:40 a. m.-----11.0.0248.2339				8:55 a. m.-----0.112.0002				7:50 p. m.-----2.55.0058.0750			
7:00 a. m.-----10.3.0233.2419				9:00 a. m.-----0.152.0003				8:00 p. m.-----2.77.0062.0760			
7:20 a. m.-----9.98.0225.2495				9:04 a. m.-----0.204.0005				8:10 p. m.-----3.01.0068.0771			
7:40 a. m.-----9.33.0211.2568				9:10 a. m.-----0.267.0006.0002				8:20 p. m.-----3.13.0071.0783			
8:00 a. m.-----8.82.0199.2636				9:12 a. m.-----0.286.0006.0002				8:40 p. m.-----3.25.0073.0807			
8:20 a. m.-----8.56.0193.2701				9:18 a. m.-----0.267.0006.0003				9:00 p. m.-----3.25.0073.0831			
8:40 a. m.-----8.30.0188.2764				9:20 a. m.-----0.286.0006.0003				9:20 p. m.-----3.13.0071.0855			
9:00 a. m.-----7.79.0176.2825				9:25 a. m.-----0.360.0008.0004				9:35 p. m.-----3.01.0068.0873			
9:20 a. m.-----7.53.0170.2883				9:35 a. m.-----0.405.0009.0005				9:40 p. m.-----3.01.0068.0879			
9:40 a. m.-----7.27.0164.2939				9:40 a. m.-----0.500.0011.0006				9:50 p. m.-----3.01.0068.0890			
10:00 a. m.-----7.02.0158.2993				9:45 a. m.-----0.644.0014.0007				10:00 p. m.-----3.25.0073.0902			
10:20 a. m.-----6.76.0153.3045				9:50 a. m.-----0.712.0016.0008				10:20 p. m.-----3.39.0076.0927			
10:40 a. m.-----6.54.0148.3095				9:55 a. m.-----0.746.0017.0009				10:40 p. m.-----3.53.0080.0953			
11:00 a. m.-----6.32.0143.3144				10:00 a. m.-----0.746.0017.0010				11:00 p. m.-----3.66.0083.0980			
11:20 a. m.-----6.10.0138.3191				10:17 a. m.-----0.712.0016.0015				11:20 p. m.-----3.80.0086.1008			
11:40 a. m.-----5.88.0133.3236				10:20 a. m.-----0.746.0017.0016				11:40 p. m.-----3.80.0086.1037			
12:00 m.-----5.88.0133.3280				10:40 a. m.-----0.980.0022.0023				12:00 p. m.-----4.10.0093.1067			
12:20 p. m.-----5.66.0128.3323				10:45 a. m.-----1.09.0025.0025				June 19:			
12:40 p. m.-----5.48.0124.3365				11:00 a. m.-----1.48.0033.0032				12:05 a. m.-----4.27.0096.1075			
1:00 p. m.-----5.48.0124.3406								12:20 a. m.-----5.30.0120.1102			
1:20 p. m.-----5.30.0120.3447								12:30 a. m.-----6.54.0148.1124			
1:40 p. m.-----5.30.0120.3487								12:40 a. m.-----9.07.0205.1153			
2:00 p. m.-----5.12.0116.3526								12:45 a. m.-----11.0.0248.1172			
2:20 p. m.-----5.12.0116.3565								12:50 a. m.-----12.6.0285.1194			

¹ Observed flow without corrections for base flow.

TABLE 70.—Run-off from watershed 13 for selected storms, 1939—Continued

STORM OF JUNE 18-19, TOTAL RAINFALL 2.82 INCHES—Continued				STORM OF JULY 8, TOTAL RAINFALL, 2.34 INCHES—Continued				STORM OF OCT. 25-27, TOTAL RAINFALL, 4.00 INCHES—Continued			
Date and time	Discharge	Accumulated run-off		Date and time	Discharge	Accumulated run-off		Date and time	Discharge	Accumulated run-off	
June 19—Con.				July 8—Con.				Oct. 25—Con.			
12:55 a. m.	13.8	0.0312	0.1219	6:20 a. m.	3.39	0.0076	0.0073	2:40 a. m.	0.009	T	0
1:00 a. m.	14.6	0.0330	0.1246	6:30 a. m.	2.89	0.0065	0.0085	3:00 a. m.	0.009	T	0
1:20 a. m.	16.6	0.0375	0.1363	6:40 a. m.	2.23	0.0050	0.0095	3:20 a. m.	0.011	T	0
1:25 a. m.	18.1	0.0409	0.1396	7:00 a. m.	1.87	0.0042	0.0110	3:40 a. m.	0.011	T	0
1:40 a. m.	18.6	0.0420	0.1500	7:20 a. m.	1.63	0.0037	0.0123	4:00 a. m.	0.011	T	0
2:00 a. m.	15.8	0.0357	0.1629	7:35 a. m.	1.40	0.0032	0.0131	4:20 a. m.	0.011	T	0
2:20 a. m.	13.4	0.0303	0.1739	7:40 a. m.	1.79	0.0040	0.0134	4:40 a. m.	0.013	T	0
2:40 a. m.	11.3	0.0255	0.1832	7:45 a. m.	2.34	0.0053	0.0138	5:00 a. m.	0.015	T	0
3:00 a. m.	10.3	0.0233	0.1913	7:50 a. m.	3.25	0.0073	0.0143	5:20 a. m.	0.015	T	0
3:15 a. m.	9.98	0.0225	0.1970	7:52 a. m.	4.76	0.0108	0.0146	5:40 a. m.	0.017	T	0
3:20 a. m.	10.3	0.0233	0.1989	7:55 a. m.	6.76	0.0153	0.0152	6:00 a. m.	0.017	T	0
3:40 a. m.	11.6	0.0262	0.2072	7:56 a. m.	9.33	0.0211	0.0155	6:20 a. m.	0.017	T	0
3:50 a. m.	13.0	0.0294	0.2118	7:57 a. m.	12.6	0.0285	0.0159	6:40 a. m.	0.017	T	0
4:00 a. m.	13.8	0.0312	0.2168	7:59 a. m.	18.6	0.0420	0.0171	7:00 a. m.	0.017	T	0
4:20 a. m.	15.4	0.0348	0.2278	8:00 a. m.	31.4	0.0709	0.0180	7:20 a. m.	0.019	T	0
4:35 a. m.	15.8	0.0357	0.2366	8:02 a. m.	42.4	0.0958	0.0208	7:30 a. m.	0.022	T	0
4:40 a. m.	15.8	0.0357	0.2396	8:06 a. m.	52.0	0.117	0.0279	7:40 a. m.	0.022	T	0
5:00 a. m.	15.0	0.0339	0.2512	8:16 a. m.	70.9	0.160	0.0510	8:00 a. m.	0.022	T	0
5:20 a. m.	13.8	0.0312	0.2621	8:20 a. m.	68.3	0.154	0.0615	8:20 a. m.	0.022	T	0
5:40 a. m.	12.6	0.0285	0.2720	8:40 a. m.	52.0	0.117	0.1068	8:40 a. m.	0.025	T	0
6:00 a. m.	11.3	0.0255	0.2810	9:00 a. m.	37.5	0.0847	0.1405	9:00 a. m.	0.025	T	0
6:20 a. m.	10.3	0.0233	0.2891	9:20 a. m.	28.0	0.0632	0.1652	9:20 a. m.	0.028	0.0001	0
6:40 a. m.	9.33	0.0211	0.2965	9:40 a. m.	20.0	0.0452	0.1833	9:40 a. m.	0.031	0.0001	0
7:00 a. m.	8.82	0.0199	0.3033	10:00 a. m.	15.0	0.0339	0.1965	10:00 a. m.	0.035	0.0001	0
7:20 a. m.	8.30	0.0188	0.3098	10:20 a. m.	12.3	0.0278	0.2068	10:20 a. m.	0.035	0.0001	0
7:40 a. m.	8.04	0.0182	0.3160	10:40 a. m.	10.3	0.0233	0.2153	10:40 a. m.	0.035	0.0001	0
8:00 a. m.	8.30	0.0188	0.3222	11:00 a. m.	8.82	0.0199	0.2225	10:47 a. m.	0.043	0.0001	0
8:20 a. m.	8.30	0.0188	0.3285	11:20 a. m.	7.79	0.0176	0.2288	10:57 a. m.	0.052	0.0001	0
8:40 a. m.	8.56	0.0193	0.3348	11:40 a. m.	7.02	0.0158	0.2344	11:00 a. m.	0.052	0.0001	0
9:00 a. m.	8.30	0.0188	0.3411	12:00 m.	6.32	0.0143	0.2394	11:07 a. m.	0.056	0.0001	0
9:20 a. m.	8.04	0.0182	0.3473	12:20 p. m.	5.66	0.0128	0.2439	11:20 a. m.	0.052	0.0001	0
9:40 a. m.	7.79	0.0176	0.3533	12:30 p. m.	5.30	0.0120	0.2460	11:40 a. m.	0.047	0.0001	0
10:00 a. m.	7.53	0.0170	0.3591	12:40 p. m.	6.76	0.0153	0.2483	12:00 m.	0.039	0.0001	0
10:20 a. m.	7.02	0.0158	0.3646	12:45 p. m.	9.33	0.0211	0.2498	12:20 p. m.	0.035	0.0001	0
10:40 a. m.	6.54	0.0148	0.3697	12:50 p. m.	14.2	0.0321	0.2520	12:40 p. m.	0.031	0.0001	0
10:50 a. m.	6.32	0.0143	0.3721	12:55 p. m.	21.5	0.0486	0.2554	1:00 p. m.	0.028	0.0001	0
11:30 a. m.	5.66	0.0128	0.3812	12:58 p. m.	30.1	0.0680	0.2583	1:20 p. m.	0.028	0.0001	0
12:30 p. m.	4.94	0.0112	0.3932	1:00 p. m.	35.8	0.0809	0.2608	1:40 p. m.	0.028	0.0001	0
1:30 p. m.	4.43	0.0100	0.4038	1:04 p. m.	52.0	0.117	0.2674	1:50 p. m.	0.025	T	0
2:30 p. m.	3.94	0.0089	0.4132	1:05 p. m.	69.6	0.157	0.2697	2:00 p. m.	0.028	0.0001	0
3:30 p. m.	3.39	0.0076	0.4214	1:06 p. m.	91.4	0.206	0.2727	2:20 p. m.	0.035	0.0001	0
4:00 p. m.	3.13	0.0071	0.4251	1:12 p. m.	102	0.230	0.2945	2:28 p. m.	0.043	0.0001	0
5:00 p. m.	2.77	0.0062	0.4317	1:20 p. m.	94.8	0.214	0.3241	2:32 p. m.	0.052	0.0001	0
6:00 p. m.	2.44	0.0055	0.4375	1:30 p. m.	77.7	0.176	0.3566	2:35 p. m.	0.061	0.0001	0
7:00 p. m.	2.34	0.0053	0.4429	1:40 p. m.	69.0	0.157	0.3843	2:39 p. m.	0.077	0.0002	0
8:00 p. m.	2.13	0.0048	0.4479	2:00 p. m.	60.2	0.136	0.4332	2:40 p. m.	0.089	0.0002	0
9:30 p. m.	1.96	0.0044	0.4548	2:10 p. m.	52.0	0.118	0.4543	2:43 p. m.	0.112	0.0002	0
11:00 p. m.	1.79	0.0040	0.4611	2:20 p. m.	45.3	0.102	0.4726	2:45 p. m.	0.141	0.0003	0
12:00 p. m.	1.70	0.0038	0.4650	2:30 p. m.	38.3	0.0865	0.4883	2:50 p. m.	0.190	0.0004	0
June 20:				2:40 p. m.	32.1	0.0725	0.5015	2:55 p. m.	0.204	0.0005	0
12:30 a. m.	1.63	0.0037	0.4669	2:50 p. m.	27.3	0.0617	0.5127	3:00 p. m.	0.267	0.0006	0
2:00 a. m.	1.55	0.0035	0.4723	3:00 p. m.	23.8	0.0538	0.5223	3:07 p. m.	0.341	0.0008	0.0001
3:30 a. m.	1.48	0.0033	0.4774	3:20 p. m.	19.5	0.0440	0.5386	3:20 p. m.	0.323	0.0007	0.0003
5:00 a. m.	1.40	0.0032	0.4822	3:40 p. m.	16.2	0.0366	0.5520	3:40 p. m.	0.251	0.0006	0.0003
7:30 a. m.	1.33	0.0030	0.4900	4:00 p. m.	14.6	0.0330	0.5636	4:00 p. m.	0.190	0.0004	0.0002
9:30 a. m.	1.21	0.0027	0.4942	4:30 p. m.	12.6	0.0285	0.5790	4:10 p. m.	0.164	0.0004	0.0003
10:40 a. m.	1.15	0.0026	0.4968	5:00 p. m.	11.3	0.0255	0.5925	4:20 p. m.	0.190	0.0004	0.0003
10:30 a. m.	1.09	0.0025	0.4981	6:00 p. m.	8.82	0.0199	0.6152	4:28 p. m.	0.251	0.0006	0.0010
11:40 a. m.	0.980	0.0022	0.5009	7:00 p. m.	7.27	0.0164	0.6334	4:32 p. m.	0.323	0.0007	0.0010
1:00 p. m.	0.780	0.0018	0.5036	9:00 p. m.	5.66	0.0128	0.6626	4:36 p. m.	0.405	0.0009	0.0011
2:00 p. m.	0.712	0.0016	0.5053	12:00 p. m.	4.27	0.0096	0.6962	4:40 p. m.	0.528	0.0012	0.0012
3:00 p. m.	0.644	0.0014	0.5068	July 9:				4:50 p. m.	0.583	0.0013	0.0014
4:40 p. m.	0.555	0.0012	0.5090	3:00 a. m.	3.80	0.0086	0.7235	5:00 p. m.	0.555	0.0012	0.0016
6:20 p. m.	0.473	0.0011	0.5110	6:00 a. m.	3.13	0.0071	0.7469	5:15 p. m.	0.473	0.0011	0.0019
9:20 p. m.	0.473	0.0011	0.5143	9:00 a. m.	2.55	0.0058	0.7661	5:20 p. m.	0.473	0.0011	0.0020
10:30 p. m.	0.450	0.0010	0.5155	12:00 m.	1.96	0.0044	0.7814	5:30 p. m.	0.528	0.0012	0.0022
12:00 p. m.	0.450	0.0010	0.5170	3:00 p. m.	1.48	0.0033	0.7928	5:40 p. m.	0.500	0.0011	0.0024
STORM OF JULY 8, TOTAL RAINFALL, 2.34 INCHES				6:00 p. m.	1.33	0.0030	0.8024	5:55 p. m.	0.450	0.0010	0.0026
				12:00 p. m.	1.09	0.0025	0.8192	6:00 p. m.	0.450	0.0010	0.0027
				STORM OF OCT. 25-27, TOTAL RAINFALL, 4.00 INCHES				6:05 p. m.	0.450	0.0010	0.0029
								6:10 p. m.	0.555	0.0012	0.0029
								6:20 p. m.	0.583	0.0013	0.0031
								6:25 p. m.	0.610	0.0014	0.0032
								6:40 p. m.	0.583	0.0013	0.0030
								6:55 p. m.	0.500	0.0011	0.0035
								7:00 p. m.	0.555	0.0012	0.0040
								7:20 p. m.	0.610	0.0014	0.0044
								7:40 p. m.	0.528	0.0012	0.0048
								7:50 p. m.	0.528	0.0012	0.0050
								8:00 p. m.	0.473	0.0011	0.0052
								8:20 p. m.	0.383	0.0009	0.0055
								8:40 p. m.	0.304	0.0007	0.0058
								9:00 p. m.	0.267	0.0006	0.0060
								9:20 p. m.	0.219	0.0005	0.0062
								9:40 p. m.	0.190	0.0004	0.0064
								10:00 p. m.	0.164	0.0004	0.0065
								10:20 p. m.	0.141	0.0003	0.0066
								10:35 p. m.	0.131	0.0003	0.0067
								10:40 p. m.	0.164	0.0004	
								10:45 p. m.	0.219	0.0005	
								10:50 p. m.	0.267	0.0006	
								10:55 p. m.	0.304	0.0007	
								</			

TABLE 70.—Run-off from watershed 13 for selected storms, 1939—Continued

STORM OF OCT. 25-27, TOTAL RAINFALL, 4.00 INCHES—Continued				STORM OF OCT. 25-27, TOTAL RAINFALL, 4.00 INCHES—Continued				STORM OF OCT. 25-27, TOTAL RAINFALL, 4.00 INCHES—Continued			
Date and time	Discharge	Accumulated run-off		Date and time	Discharge	Accumulated run-off		Date and time	Discharge	Accumulated run-off	
Oct. 25—Con.	Sec.-ft.	In. per hr.	In.	Oct. 26—Con.	Sec.-ft.	In. per hr.	In.	Oct. 27—Con.	Sec.-ft.	In. per hr.	In.
11:00 p. m.	0.383	0.0009	0.0068	10:00 a. m.	1.70	0.0038	0.0234	9:55 a. m.	4.27	0.0096	0.0661
11:03 p. m.	.500	.0011		10:05 a. m.	1.87	.0042	.0237	9:57 a. m.	5.66	.0128	.0665
11:05 p. m.	.528	.0012		10:30 a. m.	1.70	.0038	.0254	10:00 a. m.	6.54	.0148	.0672
11:10 p. m.	.528	.0012	.0069	11:00 a. m.	1.27	.0029	.0271	10:03 a. m.	6.10	.0138	.0679
11:20 p. m.	.428	.0010	.0071	11:30 a. m.	1.03	.0023	.0284	10:08 a. m.	6.32	.0143	.0691
11:30 p. m.	.341	.0008	.0073	12:00 p. m.	.780	.0018	.0294	10:20 a. m.	4.94	.0112	.0717
11:40 p. m.	.267	.0006	.0074	12:30 p. m.	.644	.0014	.0302	10:30 a. m.	4.10	.0093	.0734
11:50 p. m.	.251	.0006	.0075	1:00 p. m.	.555	.0012	.0308	10:40 a. m.	3.80	.0086	.0749
12:00 p. m.	.323	.0007	.0076	1:30 p. m.	.450	.0010	.0314	11:00 a. m.	3.53	.0080	.0777
Oct. 26:				2:00 p. m.	.405	.0009	.0319	11:20 a. m.	3.13	.0071	.0802
12:10 a. m.	.323	.0007	.0077	2:30 p. m.	.360	.0008	.0323	11:40 a. m.	2.77	.0062	.0824
12:20 a. m.	.323	.0007	.0078	3:30 p. m.	.286	.0006	.0330	12:00 m.	2.23	.0050	.0843
12:25 a. m.	.304	.0007	.0079	4:00 p. m.	.251	.0006	.0333	12:20 p. m.	1.96	.0044	.0859
12:30 a. m.	.323	.0007	.0080	5:00 p. m.	.204	.0005	.0338	12:40 p. m.	1.70	.0038	.0873
12:35 a. m.	.360	.0008	.0081	6:00 p. m.	.177	.0004	.0342	1:00 p. m.	1.55	.0035	.0885
12:40 a. m.	.360	.0008	.0082	7:00 p. m.	.152	.0003	.0346	1:20 p. m.	1.40	.0032	.0896
1:00 a. m.	.304	.0007	.0085	8:30 p. m.	.131	.0003	.0351	1:40 p. m.	1.21	.0027	.0906
1:20 a. m.	.251	.0006	.0087	10:00 p. m.	.112	.0002	.0355	2:00 p. m.	1.21	.0027	.0915
1:40 a. m.	.219	.0005	.0089	11:10 p. m.	.104	.0002	.0358	2:20 p. m.	1.21	.0027	.0924
2:00 a. m.	.190	.0004	.0091	12:00 p. m.	.096	.0002	.0360	2:40 p. m.	1.15	.0026	.0933
2:20 a. m.	.190	.0004	.0092	Oct. 27:				3:00 p. m.	1.09	.0025	.0942
2:40 a. m.	.164	.0004	.0093	1:00 a. m.	.089	.0002	.0362	3:20 p. m.	1.03	.0023	.0950
3:00 a. m.	.152	.0003	.0094	3:20 a. m.	.077	.0002	.0366	3:40 p. m.	1.03	.0023	.0958
3:20 a. m.	.131	.0003	.0095	3:50 a. m.	.077	.0002	.0367	4:00 p. m.	1.03	.0023	.0966
3:40 a. m.	.112	.0002	.0096	4:00 a. m. ²	.077	.0002		4:10 p. m.	1.09	.0025	.0970
4:00 a. m.	.104	.0002	.0097	4:10 a. m.	.083	.0002		4:20 p. m.	1.03	.0023	.0974
4:20 a. m.	.096	.0002	.0098	4:20 a. m.	.096	.0002		4:40 p. m.	.980	.0022	.0981
4:40 a. m.	.089	.0002	.0099	4:30 a. m.	.112	.0002		5:00 p. m.	.930	.0021	.0988
5:00 a. m.	.083	.0002	.0100	4:40 a. m.	.071	.0002		5:20 p. m.	.880	.0020	.0995
5:20 a. m.	.071	.0002		4:45 a. m.	.190	.0004		5:40 p. m.	.880	.0020	.1002
5:40 a. m.	.071	.0002		4:48 a. m.	.251	.0006		6:00 p. m.	.830	.0019	.1009
6:00 a. m.	.066	.0001		4:50 a. m.	.304	.0007		6:20 p. m.	.780	.0018	.1015
6:20 a. m.	.061	.0001		4:55 a. m.	.405	.0009	.0368	6:40 p. m.	.780	.0018	.1021
6:40 a. m.	.056	.0001		4:59 a. m.	.528	.0012	.0369	7:00 p. m.	.746	.0017	.1027
7:00 a. m.	.052	.0001		5:00 a. m.	.610	.0014	.0369	7:20 p. m.	.712	.0016	.1032
7:20 a. m.	.052	.0001		5:02 a. m.	.830	.0019	.0370	7:40 p. m.	.678	.0015	.1037
7:40 a. m.	.047	.0001		5:05 a. m.	1.15	.0026	.0371	8:00 p. m.	.678	.0015	.1042
8:00 a. m.	.047	.0001		5:10 a. m.	1.55	.0035	.0373	8:20 p. m.	.644	.0014	.1047
8:20 a. m.	.043	.0001		5:15 a. m.	1.79	.0040	.0376	8:40 p. m.	.610	.0014	.1052
8:33 a. m.	.043	.0001		5:18 a. m.	2.55	.0058	.0378	9:00 p. m.	.610	.0014	.1057
8:35 a. m.	.052	.0001		5:19 a. m.	3.13	.0071	.0379	9:20 p. m.	.583	.0013	.1062
8:36 a. m.	.061	.0001		5:20 a. m.	4.94	.0112	.0381	9:40 p. m.	.555	.0012	.1066
8:38 a. m.	.077	.0002		5:22 a. m.	7.02	.0158	.0385	10:00 p. m.	.555	.0012	.1070
8:39 a. m.	.112	.0002		5:26 a. m.	7.02	.0158	.0396	10:20 p. m.	.528	.0012	.1074
8:40 a. m.	.190	.0004		5:30 a. m.	7.79	.0176	.0407	10:40 p. m.	.500	.0011	.1078
8:41 a. m.	.360	.0008		5:40 a. m.	6.10	.0138	.0433	11:00 p. m.	.500	.0011	.1082
8:42 a. m.	.473	.0011		5:50 a. m.	4.27	.0096	.0453	11:20 p. m.	.473	.0011	.1086
8:43 a. m.	.583	.0013		6:00 a. m.	3.25	.0073	.0467	11:40 p. m.	.450	.0010	.1089
8:46 a. m.	.610	.0014	.0101	6:05 a. m.	3.01	.0068	.0473	12:00 p. m.	.428	.0010	.1092
8:48 a. m.	.830	.0019	.0102	6:07 a. m.	3.01	.0068	.0475	Oct. 28:			
8:50 a. m. ³	1.21	.0027	.0103	6:20 a. m.	3.01	.0068	.0490	12:20 a. m.	.428	.0010	.1095
8:51 a. m.	1.70	.0038	.0104	6:40 a. m.	2.77	.0062	.0512	12:30 a. m. ³	.405	.0009	.1097
8:54 a. m.	2.44	.0055	.0106	7:00 a. m.	2.34	.0053	.0531	1:30 a. m.	.383	.0009	.1106
8:55 a. m.	3.53	.0080	.0107	7:20 a. m.	1.96	.0044	.0547	2:30 a. m.	.341	.0008	.1114
8:56 a. m.	5.30	.0120	.0109	7:40 a. m.	1.70	.0038	.0561	4:20 a. m.	.304	.0007	.1129
8:58 a. m.	6.76	.0153	.0114	7:50 a. m.	1.55	.0035	.0567	5:40 a. m.	.267	.0006	.1137
9:00 a. m.	7.53	.0170	.0119	8:00 a. m.	1.48	.0033	.0573	7:00 a. m.	.251	.0006	.1145
9:03 a. m.	9.07	.0205	.0128	8:20 a. m.	1.48	.0033	.0584	8:30 a. m.	.235	.0005	.1153
9:06 a. m.	13.0	.0294	.0140	8:25 a. m.	1.55	.0035	.0587	10:00 a. m.	.204	.0005	.1160
9:10 a. m.	10.6	.0239	.0158	8:40 a. m.	1.70	.0038	.0596	11:30 a. m.	.190	.0004	.1167
9:15 a. m.	8.30	.0188	.0176	8:50 a. m.	1.79	.0040	.0602	1:00 a. m.	.177	.0004	.1173
9:20 a. m.	6.32	.0143	.0190	8:55 a. m.	1.87	.0042	.0605	2:30 a. m.	.164	.0004	.1179
9:25 a. m.	4.43	.0100	.0200	9:00 a. m.	2.34	.0053	.0609	4:30 a. m.	.152	.0003	.1186
9:30 a. m.	3.53	.0080	.0208	9:20 a. m.	2.04	.0046	.0626	6:30 a. m.	.141	.0003	.1192
9:40 a. m.	2.65	.0060	.0220	9:25 a. m.	2.04	.0046	.0630	9:00 a. m.	.131	.0003	.1200
9:50 a. m.	1.87	.0042	.0228	9:40 a. m.	2.65	.0060	.0643	11:30 a. m.	.121	.0003	.1207
9:58 a. m.	1.63	.0037	.0233	9:50 a. m.	3.25	.0073	.0654	12:00 m.	.112	.0002	.1208

² Rain began.³ Rain ended.

TABLE 71.—Run-off from watershed 20 for selected storms, 1939

[Area 373 acres; rainfall measured at recording rain gages 54 and 102]

STORM OF FEB. 14-15, TOTAL RAINFALL 1.22 INCHES				STORM OF JUNE 18-19, TOTAL RAINFALL 3.07 INCHES				STORM OF JUNE 18-19, TOTAL RAINFALL 3.07 INCHES—Continued			
Date and time	Discharge ¹	Accumulated run-off		Date and time	Discharge ¹	Accumulated run-off		Date and time	Discharge ¹	Accumulated run-off	
Feb. 14:	Sec.-ft.	In. per hr.	In.	June 18:	Sec.-ft.	In. per hr.	In.	June 19—Con.	Sec.-ft.	In. per hr.	In.
8:20 p. m.-----	0.529	0.0014	-----	7:30 a. m.-----	0.017	T	0	2:20 a. m.-----	06.85	0.0182	0.1108
8:40 p. m.-----	.529	.0014	0.0005	8:00 a. m.-----	.022	T	0	2:40 a. m.-----	5.02	.0134	.1161
9:00 p. m.-----	.559	.0015	.0010	8:20 a. m.-----	.028	0.0001	0	3:00 a. m.-----	3.80	.0101	.1200
9:20 p. m.-----	.559	.0015	.0015	8:40 a. m.-----	.035	.0001	0	3:15 a. m.-----	3.43	.0091	.1224
9:40 p. m.-----	.588	.0016	.0020	8:55 a. m.-----	.043	.0001	0	3:20 a. m.-----	3.62	.0096	.1232
10:00 p. m.-----	.618	.0016	.0025	9:00 a. m.-----	.047	.0001	0	3:25 a. m.-----	3.80	.0101	.1240
10:20 p. m.-----	.654	.0017	.0030	9:10 a. m.-----	.056	.0001	0	3:40 a. m.-----	4.81	.0128	.1268
10:40 p. m.-----	.691	.0018	.0036	9:20 a. m.-----	.061	.0002	0	4:00 a. m.-----	7.16	.0190	.1321
11:00 p. m.-----	.764	.0020	.0042	9:25 a. m.-----	.066	.0002	0	4:20 a. m.-----	9.17	.0244	.1393
11:20 p. m.-----	.888	.0024	.0049	9:30 a. m.-----	.077	.0002	0	4:40 a. m.-----	10.3	.0274	.1479
11:40 p. m.-----	.976	.0026	.0057	9:40 a. m.-----	.104	.0003	0	4:50 a. m.-----	10.3	.0274	.1525
12:20 p. m.-----	1.19	.0032	.0067	10:00 a. m.-----	.131	.0003	.0001	5:00 a. m.-----	9.90	.0263	.1570
Feb. 15:				10:10 a. m.-----	.164	.0004	.0002	5:20 a. m.-----	8.07	.0215	.1650
12:30 a. m.-----	1.51	.0040	.0079	10:20 a. m.-----	.190	.0005	.0003	5:40 a. m.-----	6.55	.0174	.1715
12:40 a. m.-----	1.97	.0052	.0094	10:40 a. m.-----	.219	.0006	.0005	6:00 a. m.-----	5.02	.0134	.1766
12:50 a. m.-----	2.37	.0063	.0104	10:45 a. m.-----	.235	.0006		6:20 a. m.-----	3.99	.0106	.1806
1:00 a. m.-----	2.85	.0076	.0116	10:50 a. m.-----	.267	.0007		6:40 a. m.-----	3.25	.0086	.1838
1:10 a. m.-----	3.43	.0091	.0130	10:55 a. m.-----	.337	.0009	.0006	7:00 a. m.-----	2.85	.0076	.1865
1:20 a. m.-----	4.59	.0122	.0148	11:00 a. m.-----	.401	.0011	.0007	7:20 a. m.-----	2.48	.0066	.1889
1:30 a. m.-----	6.55	.0174	.0173	11:05 a. m.-----	.500	.0013	.0008	7:40 a. m.-----	2.37	.0063	.1910
1:40 a. m.-----	9.17	.0244	.0208	11:10 a. m.-----	.691	.0018	.0009	8:00 a. m.-----	2.27	.0060	.1931
1:50 a. m.-----	13.4	.0356	.0258	11:15 a. m.-----	.932	.0025	.0011	8:20 a. m.-----	2.27	.0060	.1951
2:00 a. m.-----	20.1	.0535	.0332	11:18 a. m.-----	1.30	.0034	.0013	8:40 a. m.-----	2.48	.0066	.1972
2:10 a. m.-----	27.2	.0724	.0437	11:20 a. m.-----	1.89	.0050	.0014	9:00 a. m.-----	2.72	.0072	.1995
2:20 a. m.-----	31.6	.0840	.0567	11:22 a. m.-----	2.72	.0072	.0016	9:20 a. m.-----	2.85	.0076	.2020
2:25 a. m.-----	33.1	.0880	.0639	11:25 a. m.-----	3.25	.0086	.0020	9:40 a. m.-----	2.72	.0072	.2045
2:35 a. m.-----	37.4	.0995	.0795	11:35 a. m.-----	3.43	.0091	.0035	10:00 a. m.-----	2.37	.0063	.2068
2:40 a. m.-----	39.1	.104	.0880	11:40 a. m.-----	4.17	.0111	.0043	10:20 a. m.-----	2.16	.0057	.2088
3:00 a. m.-----	43.8	.116	.1247	11:45 a. m.-----	5.49	.0146	.0054	10:40 a. m.-----	1.97	.0052	.2106
3:10 a. m.-----	45.0	.120	.1444	12:00 m.-----	7.46	.0198	.0097	10:50 a. m.-----	1.89	.0050	.2114
3:15 a. m.-----	45.0	.120	.1544	12:05 p. m.-----	8.07	.0215	.0114	11:00 a. m.-----	1.81	.0048	.2122
3:20 a. m.-----	43.8	.116	.1642	12:20 p. m.-----	10.7	.0285	.0176	12:00 m.-----	1.44	.0038	.2165
3:40 a. m.-----	36.9	.0982	.2000	12:25 p. m.-----	11.2	.0298	.0200	1:00 p. m.-----	1.24	.0033	.2201
3:50 a. m.-----	32.1	.0854	.2153	12:40 p. m.-----	9.90	.0263	.0270	2:00 p. m.-----	1.08	.0029	.2232
4:00 a. m.-----	28.2	.0750	.2287	1:00 p. m.-----	7.77	.0207	.0348	3:00 p. m.-----	.932	.0025	.2259
4:20 a. m.-----	20.8	.0553	.2504	1:20 p. m.-----	5.23	.0139	.0406	4:00 p. m.-----	.844	.0022	.2283
4:40 a. m.-----	16.3	.0434	.2669	1:40 p. m.-----	3.99	.0106	.0447	4:50 p. m.-----	.764	.0020	.2301
5:00 a. m.-----	13.0	.0346	.2799	2:00 p. m.-----	2.85	.0076	.0477	6:00 p. m.-----	.691	.0018	.2323
5:20 a. m.-----	11.6	.0308	.2908	2:20 p. m.-----	1.97	.0052	.0498	8:00 p. m.-----	.618	.0016	.2357
5:40 a. m.-----	10.3	.0274	.3005	2:40 p. m.-----	1.51	.0040	.0513	9:30 p. m.-----	.588	.0016	.2381
6:00 a. m.-----	9.53	.0253	.3093	3:00 p. m.-----	1.24	.0033	.0525	11:00 p. m.-----	.559	.0015	.2405
6:20 a. m.-----	8.44	.0224	.3172	3:20 p. m.-----	1.02	.0027	.0535	12:00 p. m.-----	.529	.0014	.2419
6:40 a. m.-----	7.77	.0207	.3244	3:40 p. m.-----	.888	.0024	.0544	June 20:			
7:00 a. m.-----	7.16	.0190	.3310	4:00 p. m.-----	.800	.0021	.0551	1:30 a. m.-----	.500	.0013	.2440
7:20 a. m.-----	6.55	.0174	.3371	4:20 p. m.-----	.727	.0019	.0558	3:00 a. m.-----	.470	.0012	.2458
7:40 a. m.-----	6.02	.0160	.3427	4:40 p. m.-----	.654	.0017	.0564	4:30 a. m.-----	.447	.0012	.2476
8:00 a. m.-----	5.76	.0153	.3479	5:00 p. m.-----	.588	.0016	.0569	8:30 a. m.-----	.424	.0011	.2524
8:20 a. m.-----	5.23	.0139	.3528	5:20 p. m.-----	.559	.0015	.0574	10:00 a. m.-----	.401	.0011	.2540
8:40 a. m.-----	5.02	.0134	.3573	5:40 p. m.-----	.529	.0014	.0579	11:00 a. m.-----	.378	.0010	.2550
9:00 a. m.-----	4.59	.0122	.3616	6:00 p. m.-----	.500	.0014	.0584	11:30 a. m.-----	.355	.0009	.2555
9:20 a. m.-----	4.38	.0116	.3656	6:20 p. m.-----	.470	.0013	.0589	1:00 p. m.-----	.320	.0008	.2567
9:40 a. m.-----	4.17	.0111	.3694	6:40 p. m.-----	.470	.0012	.0593	1:40 p. m.-----	.302	.0008	.2572
10:00 a. m.-----	3.99	.0106	.3731	6:45 p. m.-----	.470	.0012	.0594	3:00 p. m.-----	.267	.0007	.2582
10:20 a. m.-----	3.80	.0101	.3767	7:00 p. m.-----	.529	.0014	.0597	5:00 p. m.-----	.235	.0006	.2595
10:40 a. m.-----	3.62	.0096	.3802	7:10 p. m.-----	.588	.0016	.0599	7:00 p. m.-----	.219	.0006	.2607
11:00 a. m.-----	3.43	.0091	.3835	7:20 p. m.-----	.727	.0019	.0602	12:00 p. m.-----	.219	.0006	.2636
11:20 a. m.-----	3.43	.0091	.3866	7:40 p. m.-----	.976	.0026	.0609				
11:40 a. m.-----	3.25	.0086	.3896	7:50 p. m.-----	1.08	.0029	.0614				
12:00 m.-----	3.25	.0086	.3925	8:00 p. m.-----	1.44	.0038	.0620				
12:20 p. m.-----	3.25	.0086	.3954	8:10 p. m.-----	1.81	.0048	.0627				
12:40 p. m.-----	3.12	.0083	.3982	8:20 p. m.-----	2.16	.0057	.0636				
1:00 p. m.-----	2.99	.0080	.4010	8:30 p. m.-----	2.48	.0066	.0646				
1:20 p. m.-----	2.99	.0080	.4037	8:40 p. m.-----	2.59	.0069	.0657				
1:40 p. m.-----	2.99	.0080	.4064	9:00 p. m.-----	2.37	.0063	.0679				
2:00 p. m.-----	2.85	.0076	.4091	9:20 p. m.-----	1.97	.0052	.0698				
2:30 p. m.-----	2.85	.0076	.4130	9:40 p. m.-----	1.73	.0046	.0714				
4:00 p. m.-----	2.59	.0069	.4238	10:00 p. m.-----	1.58	.0042	.0729				
5:30 p. m.-----	2.37	.0063	.4337	10:20 p. m.-----	1.58	.0042	.0743				
7:00 p. m.-----	2.16	.0057	.4427	10:30 p. m.-----	1.58	.0042	.0750				
8:30 p. m.-----	1.97	.0052	.4508	10:40 p. m.-----	1.58	.0042	.0757				
10:00 p. m.-----	1.89	.0050	.4584	10:50 p. m.-----	1.65	.0044	.0764				
11:30 p. m.-----	1.73	.0046	.4656	11:00 p. m.-----	1.65	.0044	.0771				
12:00 p. m.-----	1.73	.0046	.4679	11:20 p. m.-----	1.73	.0046	.0786				
Feb. 16:				11:30 p. m.-----	1.81	.0048	.0794				
12:30 a. m.-----	1.65	.0044	.4701	11:40 p. m.-----	1.81	.0048	.0802				
2:00 a. m.-----	1.58	.0042	.4765	11:56 p. m.-----	1.73	.0046	.0815				
3:30 a. m.-----	1.44	.0038	.4825	12:00 p. m.-----	1.73	.0046	.0818				
5:00 a. m.-----	1.24	.0033	.4879	June 19:							
6:00 a. m.-----	1.19	.0032	.4911	12:10 a. m.-----	1.81	.0048	.0826				
9:00 a. m.-----	1.19	.0032	.5007	12:20 a. m.-----	1.97	.0052	.0834				
9:30 a. m.-----	1.24	.0033	.5023	12:25 a. m.-----	1.97	.0052	.0838				
10:30 a. m.-----	1.37	.0036	.5057	12:40 a. m.-----	2.48	.0066	.0853				
11:00 a. m.-----	1.37	.0036	.5075	1:00 a. m.-----	3.43	.0091	.0879				
11:30 a. m.-----	1.30	.0034	.5093	1:10 a. m.-----	4.38	.0116	.0896				
4:00 p. m.-----	1.30	.0034	.5246	1:20 a. m.-----	5.23	.0139	.0917				
5:30 p. m.-----	1.24	.0033	.5297	1:40 a. m.-----	7.16	.0190	.0972				
8:00 p. m.-----	1.19	.0032	.5377	1:50 a. m.-----	7.77	.0207	.1005				
10:00 p. m.-----	1.13	.0030	.5439	2:00 a. m.-----	7.77	.0207	.1039				
12:00 p. m.-----	1.08	.0029	.5499	2:10 a. m.-----	7.46	.0198	.1076				

¹ Observed flow without corrections for base flow.² Rain began.

TABLE 71.—Run-off from watershed 20 for selected storms, 1939—Continued

Date and time				Discharge				Accumulated run-off				Date and time				Discharge				Accumulated run-off																											
STORM OF JULY 8, TOTAL RAINFALL 1.90 INCHES—Continued												STORM OF OCT. 25-27, TOTAL RAINFALL 3.84 INCHES—Continued												STORM OF OCT. 25-27, TOTAL RAINFALL 3.84 INCHES—Continued																							
July 8—Con.				Sec.-ft.				In. per hr.				In.				Oct. 25—Con.				Sec.-ft.				In. per hr.				In.				Oct. 26—Con.				Sec.-ft.				In. per hr.				In.			
7:50 a. m.				3.25				0.0086				0.0301				9:00 a. m.				0.015				T				0				9:00 a. m. ³				2.16				0.0057				0.0138			
7:51 a. m.				6.55				0.0174				0.0303				9:20 a. m.				0.017				T				0				9:03 a. m.				2.27				0.0060				0.0141			
7:55 a. m.				12.0				0.0319				0.0319				9:40 a. m.				0.019				T				0				9:10 a. m.				1.81				0.0048				0.0147			
8:00 a. m.				18.8				0.0500				0.0353				10:00 a. m.				0.022				T				0				9:15 a. m.				1.37				0.0036				0.0151			
8:05 a. m.				26.7				0.0710				0.0403				10:20 a. m.				0.025				0.0001				0				9:20 a. m.				1.13				0.0030				0.0154			
8:10 a. m.				30.6				0.0814				0.0467				10:40 a. m.				0.025				0.0001				0				9:27 a. m.				0.932				0.0025				0.0157			
8:20 a. m.				35.2				0.0936				0.0613				11:00 a. m.				0.028				0.0001				0				9:30 a. m.				1.13				0.0030				0.0158			
8:25 a. m.				41.4				0.110				0.0698				11:20 a. m.				0.031				0.0001				0				9:32 a. m.				1.65				0.0044				0.0159			
8:30 a. m.				52.8				0.140				0.0802				11:40 a. m.				0.031				0.0001				0				9:35 a. m.				2.37				0.0063				0.0162			
8:31 a. m.				66.1				0.176				0.0828				12:00 m.				0.031				0.0001				0				9:36 a. m.				3.62				0.0096				0.0163			
8:34 a. m.				75.3				0.200				0.0922				12:20 p. m.				0.035				0.0001				0				9:37 a. m.				7.46				0.0198				0.0165			
8:40 a. m.				66.1				0.176				0.1110				12:40 p. m.				0.035				0.0001				0				9:38 a. m.				9.53				0.0253				0.0169			
8:50 a. m.				54.2				0.144				0.1377				1:00 p. m.				0.035				0.0001				0				9:40 a. m.				13.4				0.0356				0.0179			
9:00 a. m.				42.6				0.113				0.1592				1:20 p. m.				0.035				0.0001				0				9:42 a. m.				13.9				0.0370				0.0191			
9:10 a. m.				34.7				0.0923				0.1763				1:40 p. m.				0.035				0.0001				0				9:50 a. m.				11.6				0.0308				0.0236			
9:20 a. m.				28.2				0.0750				0.1902				2:00 p. m.				0.039				0.0001				0				10:00 a. m.				8.44				0.0224				0.0280			
9:30 a. m.				21.5				0.0572				0.2012				2:20 p. m.				0.039				0.0001				0				10:10 a. m.				6.02				0.0160				0.0312			
9:40 a. m.				15.6				0.0415				0.2094				2:40 p. m.				0.043				0.0001				0				10:20 a. m.				4.38				0.0116				0.0335			
10:00 a. m.				9.17				0.0244				0.2204				3:00 p. m.				0.047				0.0001				0				10:30 a. m.				3.12				0.0083				0.0352			
10:20 a. m.				6.02				0.0160				0.2271				3:20 p. m.				0.052				0.0001				0				10:40 a. m.				2.48				0.0066				0.0364			
10:40 a. m.				4.17				0.0111				0.2316				3:40 p. m.				0.056				0.0001				0				10:50 a. m.				1.89				0.0050				0.0374			
10:53 a. m.				3.25				0.0086				0.2337				4:00 p. m.				0.061				0.0002				0				11:00 a. m.				1.58				0.0042				0.0382			
11:00 a. m.				2.99				0.0080				0.2347				4:10 p. m.				0.061				0.0002				0				11:20 a. m.				1.13				0.0030				0.0383			
11:20 a. m.				2.37				0.0063				0.2371				4:20 p. m.				0.071				0.0002				0				11:40 a. m.				0.888				0.0024				0.0384			
11:40 a. m.				1.97				0.0052				0.2390				4:40 p. m.				0.083				0.0002				0.0001				12:00 m.				0.691				0.0018				0.0385			
12:00 m.				1.73				0.0046				0.2406				5:00 p. m.				0.104				0.0003				0.0002				12:30 p. m.				0.529				0.0014				0.0393			
12:20 p. m.				1.54				0.0041				0.2421				5:20 p. m.				0.121				0.0003				0.0003				1:00 p. m.				0.424				0.0011				0.0399			
12:23 p. m.				1.51				0.0040				0.2423				5:40 p. m.				0.141				0.0004				0.0004				1:40 p. m.				0.337				0.0009				0.0406			
12:40 p. m.				3.25				0.0086				0.2441				6:00 p. m.				0.164				0.0004				0.0005				2:30 p. m.				0.285				0.0008				0.0413			
12:45 p. m.				6.85				0.0182				0.2452				6:20 p. m.				0.190				0.0005				0.0007				3:00 p. m.				0.251				0.0007				0.0417			
12:48 p. m.				8.80				0.0234				0.2462				6:32 p. m.				0.204				0.0005				0.0008				4:00 p. m.				0.190				0.0005				0.0423			
12:52 p. m.				8.62				0.0229				0.2477				6:40 p. m.				0.285				0.0008				0.0009				5:00 p. m.				0.152				0.0004				0.0427			
1:00 p. m.				12.5				0.0332				0.2514				6:44 p. m.				0.378				0.0010				0.0010				6:00 p. m.				0.121				0.0003				0.0431			
1:10 p. m.				26.7				0.0710				0.2601				6:50 p. m.				0.500				0.0013				0.0011				7:00 p. m.				0.104				0.0003				0.0434			
1:20 p. m.				37.4				0.0995				0.2743				7:00 p. m.				0.500				0.0013				0.0013				7:40 p. m.				0.096				0.0002				0.0436			
1:30 p. m.				52.8				0.140				0.2943				7:05 p. m.				0.654				0.0017				0.0014				9:00 p. m.				0.083				0.0002				0.0438			
1:38 p. m.				63.0				0.168				0.3148				7:10 p. m.				0.800				0.0021				0.0016				9:50 p. m.				0.077				0.0002				0.0439			
1:40 p. m.				62.2				0.165				0.3204				7:20 p. m.				0.888				0.0024				0.0020				11:00 p. m.				0.071				0.0002				0.0440			
1:50 p. m.				52.8				0.140				0.3459				7:40 p. m.				0.800				0.0021				0.0027				12:00 p. m.				0.066				0.0002				0.0441			
2:00 p. m.				43.8				0.116				0.3673				8:00 p. m.				0.727				0.0019				0.0034				Oct. 27:															
2:10 p. m.				36.9				0.0982				0.3852				8:20 p. m.				0.727				0.0019				0.0040				12:10 a. m.				0.066				0.0002				0.0441			
2:20 p. m. ³				30.6				0.0814				0.4001				8:25 p. m.				0.727				0.0019				0.0042				1:30 a. m.				0.061				0.0002				0.0442			
2:40 p. m.				21.5				0.0572				0.4232				8:40 p. m.				0.691				0.0018				0.0046				2:40 a. m.				0.056				0.0001				0.0443			
3:00 p. m.				14.4				0.0383				0.4391				9:00 p. m.				0.588				0.0016				0.0052				3:57 a. m. ²				0.052				0.0001				0.0444			
3:20 p. m.				10.7				0.0285				0.4502				9:20 p. m.				0.500				0.0013				0.0057				4:00 a. m.				0.052				0.0001				0.0445			
3:40 p. m.				8.07				0.0215				0.4585				9:40 p. m.				0.447				0.0012				0.0061				4:05 a. m.				0.052				0.0001				0.0446			
4:00 p. m.				6.29				0.0167				0.4649				10:00 p. m.				0.424				0.0011				0.0065				4:20 a. m.				0.056				0.0001				0.0447			
5:00 p. m.				3.62				0.0096				0.4781				10:20 p. m.				0.401				0.0011				0.0069				4:40 a. m.				0.066				0.0002				0.0448			
6:00 p. m.				2.48				0.0066				0.4862				10:40 p. m.				0.378				0.0010				0.0072				4:45 a. m.				0.071				0.0002				0.0449			
7:00 p. m.				1.97				0.0052				0.4921				11:00 p. m.				0.378				0.0010				0.0075				4:50 a. m.				0.083				0.0002				0.0450			
8:00 p. m.				1.73				0.0046				0.4970				11:20 p. m.				0.378				0.0010				0.0078				4:55 a. m.				0.096				0.0002				0.0451			
10:00 p. m.				1.44				0.0038				0.5054				11:40 p. m.				0.378				0.0010				0.0081				5:00 a. m.				0.121				0.0003				0.0452			
12:00 p. m.				1.21				0.0032				0.5124				12:00 p. m.				0.285				0.0008				0.0084				5:02 a. m.				0.152				0.0004				0.0453			
Oct. 25:																Oct. 26:																5:03 a. m.				0.235				0.0006				0.0454			
12:20 a. m. ²				0.005				T				0				12:20 a. m.				0.235				0.0006				0.0086				5:04 a. m.				0.401				0.0011				0.0455			
1:40 a. m.				0.006				T				0				12:40 a. m.				0.219				0.0006				0.0088				5:05 a. m.				0.618				0.0016				0.0456			
2:00 a. m.				0.006				T				0				12:50 a. m.				0.204				0.0005				0.0089				5:06 a. m.				0.727				0.0019				0.0457			
2:20 a. m.				0.006				T				0				1:00 a. m.				0.204				0.0005				0.0090				5:07 a. m.				0.932				0.0025				0.0458			
2:40 a. m.				0.006				T				0				1:20 a. m.				0.204				0.0005																							

² Rain began.³ Rain ended.

TABLE 71.—Run-off from watershed 20 for selected storms, 1939—Continued

Date and time	Discharge	Accumulated run-off	Date and time	Discharge	Accumulated run-off	Date and time	Discharge	Accumulated run-off
STORM OF OCT. 25-27, TOTAL RAINFALL 3.84 INCHES—Continued			STORM OF OCT. 25-27, TOTAL RAINFALL 3.84 INCHES—Continued			STORM OF OCT. 25-27, TOTAL RAINFALL 3.84 INCHES—Continued		
Oct. 27—Con.	Sec.-ft.	In. per hr.	Oct. 27—Con.	Sec.-ft.	In. per hr.	Oct. 27—Con.	Sec.-ft.	In. per hr.
9:35 a. m.	1.73	0.0046	1:40 p. m.	0.800	0.0021	9:00 p. m.	0.378	0.0010
9:40 a. m.	1.81	.0048	2:00 p. m.	.727	.0019	10:00 p. m.	.337	.0009
9:45 a. m.	2.16	.0057	2:15 p. m.	.691	.0018	10:20 p. m.	.302	.0008
9:50 a. m.	2.72	.0072	2:20 p. m.	.691	.0018	12:00 p. m.	.267	.0007
9:55 a. m.	3.43	.0091	2:40 p. m.	.691	.0018	Oct. 28:		
10:00 a. m.	3.62	.0096	3:00 p. m.	.654	.0017	12:20 a. m.	.267	.0007
10:10 a. m.	4.17	.0111	3:20 p. m.	.654	.0017	1:30 a. m.	.235	.0006
10:20 a. m.	4.17	.0111	3:40 p. m.	.691	.0018	2:30 a. m.	.204	.0005
10:30 a. m.	3.99	.0106	3:50 p. m.	.691	.0018	4:00 a. m.	.177	.0005
10:40 a. m.	5.76	.0153	4:00 p. m.	.727	.0019	5:30 a. m.	.152	.0004
10:42 a. m.	6.02	.0160	4:15 p. m.	.764	.0020	7:30 a. m.	.131	.0003
10:45 a. m.	6.02	.0160	4:20 p. m.	.764	.0020	9:30 a. m.	.112	.0003
11:00 a. m.	5.02	.0134	4:40 p. m.	.727	.0019	11:00 a. m.	.104	.0003
11:20 a. m.	3.43	.0091	5:00 p. m.	.691	.0018	1:00 p. m.	.096	.0002
11:40 a. m.	2.37	.0063	5:20 p. m.	.654	.0017	2:30 p. m.	.089	.0002
12:00 m.	1.81	.0048	5:40 p. m.	.618	.0016	4:00 p. m.	.083	.0002
12:20 p. m.	1.44	.0038	6:00 p. m. ³	.654	.0017	5:30 p. m.	.077	.0002
12:40 p. m.	1.19	.0032	7:00 p. m.	.529	.0014	8:00 p. m.	.071	.0002
1:00 p. m.	1.02	.0027	7:30 p. m.	.470	.0012	12:00 p. m.	.066	.0002
1:20 p. m.	.888	.0024	8:20 p. m.	.424	.0011			

³ Rain ended.

TABLE 72.—Run-off from watershed 172 for selected storms, 1939

[Area 43.6 acres; rainfall measured at recording rain gages 145, 146 102]

Date and time	Discharge ¹	Accumulated run-off	Date and time	Discharge ¹	Accumulated run-off	Date and time	Discharge ¹	Accumulated run-off
STORM OF FEB. 14-15, TOTAL RAINFALL 1.31 INCHES			STORM OF FEB. 14-15, TOTAL RAINFALL 1.31 INCHES—Continued			STORM OF JUNE 18-19, TOTAL RAINFALL 2.95 INCHES—Continued		
Feb. 14:	Sec.-ft.	In. per hr.	Feb. 15—Con.	Sec.-ft.	In. per hr.	June 18—Con.	Sec.-ft.	In. per hr.
8:30 p. m.	0.098	0.0022	1:00 p. m.	0.45	0.0102	11:58 a. m.	1.10	0.0250
8:45 p. m.	.098	.0022	3:00 p. m.	.43	.0098	12:00 m.	1.10	.0250
9:00 p. m.	.108	.0024	5:00 p. m.	.41	.0093	12:06 p. m.	1.04	.0237
9:30 p. m.	.108	.0024	7:00 p. m.	.38	.0086	12:14 p. m.	.89	.0202
9:45 p. m.	.108	.0024	9:00 p. m.	.34	.0077	12:20 p. m.	.87	.0198
10:00 p. m.	.120	.0027	11:00 p. m.	.32	.0073	12:33 p. m.	.89	.0202
10:15 p. m.	.120	.0027	12:00 p. m.	.31	.0070	12:40 p. m.	.87	.0198
10:30 p. m.	.132	.0030	Feb. 16:			12:47 p. m.	.80	.0182
10:45 p. m.	.132	.0030	2:00 a. m.	.300	.0068	12:56 p. m.	.94	.0214
11:00 p. m.	.155	.0035	4:00 a. m.	.285	.0065	1:00 p. m.	.92	.0209
11:15 p. m.	.167	.0038	12:00 m.	.285	.0065	1:10 p. m.	.78	.0177
11:30 p. m.	.195	.0044	2:10 p. m.	.238	.0054	1:20 p. m.	.63	.0143
11:45 p. m.	.224	.0051	12:00 p. m.	.238	.0054	1:30 p. m.	.50	.0114
12:00 p. m.	.269	.0061				1:40 p. m.	.41	.0093
Feb. 15:			STORM OF JUNE 18-19, TOTAL RAINFALL 2.95 INCHES			1:50 p. m.	.36	.0082
12:15 a. m.	.31	.0070	June 18:			2:00 p. m.	.31	.0070
12:30 a. m.	.39	.0089	7:30 a. m.	0.0028	T	2:10 p. m.	.285	.0065
12:45 a. m.	.47	.0107	8:40 a. m.	.0048	0.0001	2:20 p. m.	.254	.0058
12:50 a. m.	.50	.0114	7:40 a. m.	.0048	.0002	2:40 p. m.	.224	.0051
1:00 a. m.	.65	.0148	8:00 a. m.	.0111	.0002	3:00 p. m.	.195	.0044
1:10 a. m.	.80	.0182	8:20 a. m.	.0111	.0002	3:20 p. m.	.167	.0038
1:20 a. m.	1.07	.0243	8:40 a. m.	.0180	.0004	3:40 p. m.	.143	.0032
1:30 a. m.	1.56	.0355	8:50 a. m.	.0251	.0006	4:00 p. m.	.132	.0030
1:35 a. m.	1.84	.0419	9:00 a. m.	.0251	.0006	4:20 p. m.	.120	.0027
1:40 a. m.	2.03	.0462	9:05 a. m.	.0342	.0008	4:40 p. m.	.120	.0027
1:50 a. m.	2.78	.0632	9:07 a. m.	.0400	.0009	4:50 p. m.	.120	.0027
2:00 a. m.	3.77	.0858	9:20 a. m.	.0342	.0008	5:00 p. m.	.108	.0024
2:10 a. m.	4.38	.0996	9:40 a. m.	.0400	.0009	5:20 p. m.	.108	.0024
2:20 a. m.	4.86	.111	9:50 a. m.	.0480	.0011	5:40 p. m.	.108	.0024
2:30 a. m.	5.20	.118	10:00 a. m.	.0480	.0011	6:00 p. m.	.098	.0022
2:40 a. m.	5.53	.126	10:20 a. m.	.0480	.0011	6:20 p. m.	.098	.0022
2:50 a. m.	5.70	.130	10:35 a. m.	.057	.0013	6:40 p. m.	.088	.0020
3:00 a. m.	5.88	.134	10:40 a. m.	.057	.0013	6:50 p. m.	.108	.0024
3:15 a. m.	5.03	.114	10:50 a. m.	.057	.0013	7:00 p. m.	.132	.0030
3:30 a. m.	3.62	.0824	10:57 a. m.	.077	.0018	7:10 p. m.	.155	.0035
3:45 a. m.	2.65	.0603	11:00 a. m.	.088	.0020	7:20 p. m.	.195	.0044
4:00 a. m.	2.03	.0462	11:03 a. m.	.108	.0024	7:30 p. m.	.224	.0051
4:15 a. m.	1.81	.0412	11:05 a. m.	.132	.0030	7:40 p. m.	.285	.0065
4:30 a. m.	1.56	.0355	11:07 a. m.	.155	.0035	7:45 p. m.	.36	.0073
4:45 a. m.	1.39	.0316	11:08 a. m.	.181	.0041	7:50 p. m.	.32	.0062
5:00 a. m.	1.26	.0287	11:10 a. m.	.210	.0048	7:55 p. m.	.43	.0098
5:15 a. m.	1.15	.0262	11:12 a. m.	.269	.0061	8:00 p. m.	.48	.0109
5:30 a. m.	1.07	.0243	11:14 a. m.	.31	.0070	8:10 p. m.	.61	.0139
6:00 a. m.	.92	.0209	11:20 a. m.	.39	.0089	8:15 p. m.	.63	.0143
6:30 a. m.	.82	.0186	11:30 a. m.	.50	.0114	8:20 p. m.	.63	.0143
7:00 a. m.	.76	.0173	11:45 a. m.	.71	.0162	8:40 p. m.	.50	.0114
7:30 a. m.	.69	.0157				9:00 p. m.	.41	.0093
8:00 a. m.	.65	.0148				9:20 p. m.	.34	.0077
8:30 a. m.	.63	.0143				9:37 p. m.	.300	.0068
9:00 a. m.	.61	.0139				9:40 p. m.	.31	.0070
10:00 a. m.	.54	.0123				10:00 p. m.	.32	.0073
11:00 a. m.	.50	.0114				10:20 p. m.	.34	.0077
12:00 m.	.47	.0107				10:40 p. m.	.39	.0089

¹ Observed flow without corrections for base flow.

TABLE 72.—Run-off from watershed 172 for selected storms, 1939—Continued

STORM OF JUNE 18-19, TOTAL RAINFALL 2.95 INCHES—Continued				STORM OF JULY 8, TOTAL RAINFALL 2.48 INCHES				STORM OF JULY 8, TOTAL RAINFALL 2.48 INCHES—Continued			
Date and time	Discharge	Accumulated run-off		Date and time	Discharge	Accumulated run-off		Date and time	Discharge	Accumulated run-off	
June 18—Con.	Sec.-ft.	In. per hr.	In.	June 19—Con.	Sec.-ft.	In. per hr.	In.	July 8—Con.	Sec.-ft.	In. per hr.	In.
10:55 p. m.	0.43	0.0098	0.0973	12:00 p. m.	0.210	0.0048	0.5247	9:20 a. m.	1.50	0.0341	0.3128
11:00 p. m.	.43	.0098	.0981	July 8:				9:30 a. m.	1.17	.0266	.3179
11:20 p. m.	.41	.0093	.1013	5:05 a. m. ²				9:45 a. m.	.89	.0202	.3237
11:40 p. m.	.38	.0086	.1043	5:08 a. m.	.011	.0002	0	10:00 a. m.	.73	.0166	.3283
11:50 p. m.	.39	.0089	.1058	5:09 a. m.	.025	.0006	0	10:30 a. m.	.52	.0118	.3354
12:00 p. m.	.45	.0102	.1074	5:10 a. m.	.048	.0011	0	11:00 a. m.	.41	.0093	.3407
June 19:				5:11 a. m.	.108	.0024	0	11:30 a. m.	.34	.0077	.3449
12:10 a. m.	.61	.0139	.1094	5:12 a. m.	.120	.0027	0	12:05 p. m.	.285	.0065	.3490
12:15 a. m.	.71	.0162	.1106	5:13 a. m.	.143	.0032	0	12:20 p. m.	.269	.0061	.3506
12:20 a. m.	.92	.0209	.1122	5:14 a. m.	.155	.0035	.0001	12:26 p. m.	.254	.0058	.3512
12:25 a. m.	1.31	.0298	.1143	5:15 a. m.	.254	.0058	.0002	12:29 p. m.	.300	.0068	.3515
12:27 a. m.	1.50	.0341	.1154	5:16 a. m.	.285	.0065	.0003	12:30 p. m.	.32	.0073	.3516
12:30 a. m.	1.84	.0419	.1173	5:17 a. m.	.36	.0082	.0004	12:32 p. m.	.41	.0093	.3519
12:35 a. m.	2.03	.0462	.1210	5:18 a. m.	.41	.0093	.0005	12:34 p. m.	.52	.0118	.3523
12:37 a. m.	2.92	.0664	.1229	5:20 a. m. ³	.50	.0114	.0008	12:35 p. m.	.54	.0123	.3525
12:40 a. m.	3.34	.0760	.1265	5:26 a. m.	.71	.0162	.0022	12:40 p. m.	.71	.0162	.3537
12:43 a. m.	3.92	.0892	.1306	5:30 a. m.	.73	.0166	.0033	12:42 p. m.	.89	.0202	.3543
12:46 a. m.	4.54	.103	.1354	5:37 a. m.	.76	.0173	.0053	12:43 p. m.	.99	.0225	.3547
12:50 a. m.	4.70	.107	.1424	5:38 a. m.	.92	.0209	.0056	12:44 p. m.	1.07	.0243	.3551
12:55 a. m.	4.70	.107	.1513	5:39 a. m.	1.12	.0255	.0060	12:48 p. m.	1.45	.0330	.3570
1:00 a. m.	4.38	.0996	.1599	5:40 a. m.	1.42	.0323	.0065	12:50 p. m.	1.68	.0382	.3582
1:10 a. m.	3.77	.0858	.1753	5:41 a. m.	1.62	.0368	.0071	12:51 p. m.	1.77	.0403	.3589
1:15 a. m.	3.54	.0760	.1820	5:43 a. m.	1.77	.0403	.0084	12:52 p. m.	1.91	.0434	.3596
1:20 a. m.	3.06	.0696	.1881	5:45 a. m.	1.81	.0412	.0098	12:53 p. m.	2.39	.0544	.3604
1:25 a. m.	2.65	.0603	.1935	5:47 a. m.	1.77	.0403	.0112	12:54 p. m.	3.06	.0696	.3614
1:30 a. m.	2.39	.0544	.1983	5:50 a. m.	1.50	.0341	.0131	12:55 p. m.	3.77	.0858	.3627
1:40 a. m.	1.81	.0412	.2063	5:55 a. m.	1.15	.0262	.0156	12:56 p. m.	4.70	.107	.3643
1:50 a. m.	1.48	.0337	.2125	6:00 a. m.	.92	.0209	.0176	12:57 p. m.	5.36	.122	.3662
2:00 a. m.	1.23	.0280	.2176	6:05 a. m.	.71	.0162	.0192	12:58 p. m.	6.23	.142	.3684
2:10 a. m.	1.07	.0243	.2220	6:10 a. m.	.61	.0139	.0204	12:59 p. m.	6.77	.154	.3709
2:20 a. m.	.94	.0214	.2258	6:15 a. m.	.48	.0109	.0214	1:00 p. m.	7.53	.171	.3736
2:40 a. m.	.78	.0177	.2323	6:20 a. m.	.41	.0093	.0222	1:01 p. m.	8.31	.189	.3766
2:50 a. m.	.78	.0177	.2353	6:30 a. m.	.31	.0070	.0236	1:02 p. m.	9.53	.217	.3800
3:00 a. m.	.80	.0182	.2383	6:40 a. m.	.254	.0058	.0247	1:03 p. m.	10.6	.241	.3838
3:10 a. m.	.87	.0198	.2415	6:50 a. m.	.210	.0048	.0256	1:04 p. m.	12.2	.278	.3881
3:20 a. m.	1.07	.0243	.2452	7:00 a. m.	.181	.0041	.0263	1:05 p. m.	13.3	.303	.3929
3:25 a. m.	1.31	.0298	.2474	7:10 a. m.	.167	.0038	.0270	1:06 p. m.	14.5	.330	.3982
3:30 a. m.	1.59	.0362	.2502	7:25 a. m.	.143	.0032	.0279	1:09 p. m.	16.2	.369	.4157
3:35 a. m.	1.90	.0432	.2535	7:33 a. m. ²	.132	.0030	.0283	1:10 p. m.	16.5	.375	.4219
3:40 a. m.	2.27	.0516	.2575	7:35 a. m.	.132	.0030	.0284	1:13 p. m.	16.5	.375	.5032
3:43 a. m.	2.52	.0573	.2602	7:38 a. m.	.143	.0032	.0286	1:16 p. m.	16.2	.369	.5218
3:50 a. m.	2.92	.0664	.2674	7:40 a. m.	.167	.0038	.0287	1:20 p. m.	14.8	.337	.5453
3:55 a. m.	2.92	.0664	.2729	7:41 a. m.	.195	.0044	.0288	1:23 p. m.	12.6	.287	.5609
4:00 a. m.	2.92	.0664	.2784	7:43 a. m.	.224	.0051	.0290	1:25 p. m.	11.7	.266	.5701
4:10 a. m.	2.65	.0603	.2890	7:45 a. m.	.224	.0051	.0292	1:28 p. m.	10.2	.232	.5826
4:20 a. m.	2.39	.0544	.2986	7:46 a. m.	.238	.0054	.0293	1:30 p. m.	9.32	.212	.5900
4:30 a. m.	2.15	.0489	.3072	7:47 a. m.	.254	.0058	.0294	1:34 p. m.	7.91	.180	.6031
4:40 a. m.	1.77	.0403	.3146	7:48 a. m.	.300	.0068	.0295	1:38 p. m.	6.77	.154	.6142
5:00 a. m.	1.59	.0362	.3273	7:49 a. m.	.38	.0086	.0296	1:40 p. m.	6.23	.142	.6191
5:20 a. m.	1.26	.0287	.3381	7:50 a. m.	.41	.0093	.0298	1:45 p. m.	5.20	.118	.6299
5:30 a. m.	1.12	.0255	.3426	7:51 a. m.	.52	.0118	.0300	1:50 p. m. ³	4.54	.103	.6391
5:40 a. m.	1.02	.0232	.3467	7:52 a. m.	.58	.0132	.0302	1:55 p. m.	3.77	.0858	.6470
6:00 a. m.	.87	.0198	.3539	7:54 a. m.	.78	.0177	.0307	2:00 p. m.	3.34	.0760	.6537
6:20 a. m.	.78	.0177	.3602	7:55 a. m.	1.02	.0232	.0310	2:05 p. m.	2.92	.0664	.6596
6:40 a. m.	.71	.0162	.3659	7:56 a. m.	1.20	.0273	.0314	2:10 p. m.	2.65	.0603	.6649
7:00 a. m.	.67	.0152	.3711	7:57 a. m.	1.50	.0341	.0319	2:20 p. m.	2.27	.0516	.6742
7:20 a. m.	.63	.0143	.3760	7:58 a. m.	1.87	.0425	.0325	2:30 p. m.	1.91	.0434	.6821
7:30 a. m.	.63	.0143	.3784	7:59 a. m.	2.92	.0664	.0334	2:40 p. m.	1.77	.0403	.6891
7:40 a. m.	.65	.0148	.3808	8:00 a. m.	3.77	.0858	.0347	2:50 p. m.	1.53	.0348	.6954
8:00 a. m.	.71	.0162	.3860	8:01 a. m.	4.86	.111	.0363	3:00 p. m.	1.36	.0309	.7009
8:05 a. m.	.73	.0166	.3874	8:02 a. m.	6.77	.154	.0385	3:15 p. m.	1.15	.0262	.7081
8:20 a. m.	.85	.0193	.3919	8:03 a. m.	10.2	.232	.0417	3:30 p. m.	1.02	.0232	.7143
8:30 a. m.	.97	.0221	.3953	8:04 a. m.	13.6	.309	.0462	4:00 p. m.	.82	.0186	.7247
8:40 a. m.	.76	.0173	.3986	8:05 a. m.	19.1	.434	.0524	4:30 p. m.	.71	.0162	.7334
8:50 a. m.	.73	.0166	.4014	8:06 a. m.	23.3	.530	.0604	5:00 p. m.	.65	.0148	.7412
9:00 a. m.	.92	.0209	.4045	8:08 a. m.	26.3	.598	.0792	6:00 p. m.	.58	.0132	.7552
9:20 a. m.	.76	.0173	.4109	8:10 a. m.	25.4	.578	.0988	7:00 p. m.	.54	.0123	.7680
9:40 a. m.	.71	.0162	.4165	8:13 a. m.	22.8	.519	.1262	8:00 p. m.	.50	.0114	.7798
10:00 a. m.	.65	.0148	.4217	8:15 a. m. ³	21.6	.491	.1430	9:00 p. m.	.47	.0107	.7908
10:20 a. m.	.61	.0139	.4265	8:20 a. m.	18.6	.423	.1811	10:00 p. m.	.45	.0102	.8012
10:40 a. m.	.56	.0127	.4309	8:23 a. m.	16.5	.375	.2011	11:30 p. m.	.41	.0093	.8159
10:50 a. m.	.54	.0123	.4330	8:26 a. m.	14.3	.325	.2186	12:00 p. m.	.39	.0089	.8205
11:00 a. m.	.52	.0118	.4350	8:27 a. m.	13.1	.298	.2238	July 9:			
11:30 a. m.	.48	.0109	.4407	8:28 a. m.	12.2	.278	.2286	1:00 a. m.	.38	.0086	.8293
12:00 p. m.	.45	.0102	.4460	8:30 a. m.	10.6	.241	.2372	3:00 a. m.	.34	.0077	.8457
1:00 p. m.	.41	.0093	.4558	8:32 a. m.	9.53	.217	.2448	4:00 a. m.	.32	.0073	.8532
1:40 p. m.	.38	.0086	.4618	8:35 a. m.	8.11	.184	.2548	5:30 a. m.	.31	.0070	.8640
2:30 p. m.	.34	.0077	.4686	8:37 a. m.	7.15	.163	.2606	7:00 a. m.	.300	.0068	.8743
3:20 p. m.	.31	.0070	.4748	8:40 a. m.	6.05	.138	.2681	8:00 a. m.	.285	.0065	.8809
3:50 p. m.	.300	.0068	.4782	8:43 a. m.	5.20	.118	.2745	9:00 a. m.	.269	.0061	.8872
4:05 p. m.	.31	.0070	.4799	8:47 a. m.	4.38	.0996	.2818	9:55 a. m.	.254	.0058	.8927
4:20 p. m.	.31	.0070	.4817	8:50 a. m.	3.77	.0858	.2864	11:00 a. m.	.224	.0051	.8985
4:50 p. m.	.285	.0065	.4851	8:54 a. m.	3.20	.0728	.2917	12:00 a. m.	.195	.0044	.9033
5:50 p. m.	.254	.0058	.4913	8:58 a. m.	2.78	.0632	.2962	1:30 p. m.	.167	.0038	.9094
6:00 p. m.	.254	.0058	.4923	9:00 a. m.	2.52	.0573	.2982	3:20 p. m.	.143	.0032	.9153
6:15 p. m.	.269	.0061	.4938	9:05 a. m.	2.15	.0489	.3026	4:30 p. m.	.132	.0030	.9194
7:40 p. m.	.254	.0058	.5023	9:10 a. m.	1.90	.0432	.3064	12:00 p. m.	.128	.0030	.9419
8:40 p. m.	.238	.0054	.5079								
10:00 p. m.	.224	.0051	.5148	9:15 a. m.	1.71	.0389	.3098				
11:30 p. m.	.210	.0048	.5223								

² Rain began.³ Rain ended.

TABLE 72.—Run-off from watershed 172 for selected storms, 1939—Continued

STORM OF OCT. 25-27, TOTAL RAINFALL 4.00 INCHES				STORM OF OCT. 25-27, TOTAL RAINFALL 4.00 INCHES—Continued				STORM OF OCT. 25-27, TOTAL RAINFALL 4.00 INCHES—Continued			
Date and time	Discharge	Accumulated run-off		Date and time	Discharge	Accumulated run-off		Date and time	Discharge	Accumulated run-off	
Oct. 25:	Sec.-ft.	In. per hr.	In.	Oct. 25—Con.	Sec.-ft.	In. per hr.	In.	Oct. 27—Con.	Sec.-ft.	In. per hr.	In.
12:15 a. m. ²	0.0048	0.0001	0	8:40 p. m.	0.0251	0.0006	0.0145	5:40 a. m.	0.285	0.0065	0.0330
12:17 a. m.	.0180	.0004	0	9:00 p. m.	.0180	.0004	.0147	5:47 a. m.	.238	.0054	.0337
12:20 a. m.	.0342	.0008	0	9:20 p. m.	.0180	.0004	.0148	5:50 a. m.	.269	.0061	.0340
12:22 a. m.	.0400	.0009	0	9:40 p. m.	.0180	.0004	.0149	5:56 a. m.	.31	.0070	.0346
12:30 a. m.	.0400	.0009	.0001	10:00 p. m.	.0180	.0004	.0150	6:00 a. m.	.31	.0070	.0351
12:40 a. m.	.0342	.0008	.0002	10:20 p. m.	.0111	.0002	.0151	6:05 a. m.	.285	.0065	.0357
1:00 a. m.	.0342	.0008	.0005	10:30 p. m.	.0111	.0002	.0151	6:10 a. m.	.254	.0058	.0362
1:20 a. m.	.0252	.0006	.0007	10:40 p. m.	.0251	.0006	.0152	6:20 a. m.	.210	.0048	.0371
1:40 a. m.	.0252	.0006	.0009	11:00 p. m.	.0251	.0006	.0154	6:30 a. m.	.167	.0038	.0378
2:00 a. m.	.0180	.0004	.0011	11:20 p. m.	.0251	.0006	.0156	6:40 a. m.	.143	.0032	.0384
2:20 a. m.	.0180	.0004	.0012	11:40 p. m.	.0180	.0004	.0158	6:50 a. m.	.120	.0027	.0389
2:40 a. m.	.0111	.0002	.0013	12:00 p. m.	.0180	.0004	.0159	7:00 a. m.	.108	.0024	.0393
3:00 a. m.	.0111	.0002	.0014	Oct. 26:				7:10 a. m.	.098	.0022	.0397
5:00 a. m.	.0111	.0002	.0018	2:00 a. m.	.0180	.0004	.0167	7:20 a. m.	.077	.0018	.0400
5:20 a. m.	.0111	.0002	.0019	2:20 a. m.	.0180	.0004	.0168	7:40 a. m.	.067	.0015	.0406
5:40 a. m.	.0180	.0004	.0020	2:40 a. m.	.0111	.0002	.0169	8:00 a. m.	.067	.0015	.0411
6:00 a. m.	.0180	.0004	.0021	3:00 a. m.	.0111	.0002	.0170	8:15 a. m.	.067	.0015	.0415
6:20 a. m.	.0180	.0004	.0022	8:30 a. m.	.0111	.0002	.0181	8:20 a. m.	.077	.0018	.0416
6:40 a. m.	.0180	.0004	.0023	8:35 a. m.	.0180	.0004		8:35 a. m.	.077	.0018	.0420
7:00 a. m.	.0180	.0004	.0024	8:38 a. m.	.0400	.0009		8:40 a. m.	.088	.0020	.0422
7:20 a. m.	.0251	.0006	.0026	8:40 a. m.	.067	.0015		8:55 a. m.	.098	.0022	.0427
9:40 a. m.	.0251	.0006	.0040	8:41 a. m.	.088	.0020		9:00 a. m.	.098	.0022	.0429
10:00 a. m.	.0342	.0008	.0042	8:42 a. m.	.108	.0024		9:20 a. m.	.098	.0022	.0436
10:20 a. m.	.0342	.0008	.0045	8:43 a. m.	.132	.0030	.0181	9:25 a. m.	.120	.0027	.0468
10:40 a. m.	.0342	.0008	.0048	8:47 a. m.	.143	.0032	.0183	9:30 a. m.	.143	.0032	.0440
11:00 a. m.	.0251	.0006	.0050	8:50 a. m.	.195	.0044	.0185	9:40 a. m.	.167	.0038	.0445
11:20 a. m.	.0251	.0006	.0052	8:56 a. m.	.238	.0054	.0190	9:45 a. m.	.210	.0048	.0449
11:40 a. m.	.0180	.0004	.0054	9:00 a. m.	.224	.0051	.0194	9:50 a. m.	.254	.0058	.0453
12:00 m.	.0180	.0004	.0055	9:02 a. m.	.210	.0048	.0196	9:55 a. m.	.300	.0068	.0458
12:20 p. m.	.0180	.0004	.0056	9:07 a. m.	.224	.0051	.0200	10:00 a. m.	.31	.0070	.0464
12:40 p. m.	.0180	.0004	.0057	9:15 a. m.	.195	.0044	.0206	10:05 a. m.	.31	.0070	.0470
1:00 p. m.	.0251	.0006	.0059	9:20 a. m.	.167	.0038	.0209	10:17 a. m.	.269	.0061	.0471
1:20 p. m.	.0251	.0006	.0061	9:23 a. m.	.143	.0032	.0211	10:20 a. m.	.254	.0058	.0474
1:40 p. m.	.0251	.0006	.0063	9:30 a. m.	.120	.0027	.0214	10:26 a. m.	.238	.0054	.0480
2:00 p. m.	.0251	.0006	.0065	9:35 a. m.	.098	.0022	.0216	10:30 a. m.	.269	.0061	.0484
2:20 p. m.	.0342	.0008	.0067	9:40 a. m.	.077	.0018	.0218	10:33 a. m.	.300	.0068	.0487
2:40 p. m.	.0400	.0009	.0069	9:50 a. m.	.057	.0013	.0220	10:40 a. m.	.31	.0070	.0495
2:50 p. m.	.0400	.0009	.0071	9:55 a. m. ³	.0480	.0011	.0221	10:44 a. m.	.31	.0070	.0500
3:00 p. m.	.0480	.0011	.0073	10:00 a. m.	.0480	.0011	.0222	10:50 a. m.	.300	.0068	.0507
3:03 p. m.	.057	.0013	.0074	10:30 a. m.	.0251	.0006	.0226	11:00 a. m.	.254	.0058	.0517
3:20 p. m.	.057	.0013	.0078	11:30 a. m.	.0180	.0004	.0231	11:10 a. m.	.224	.0051	.0526
3:40 p. m.	.0480	.0011	.0082	3:00 p. m.	.0111	.0002	.0241	11:20 a. m.	.195	.0044	.0534
3:50 p. m.	.0400	.0009	.0084	12:00 p. m.	.0111	.0002	.0259	11:30 a. m.	.167	.0038	.0541
4:00 p. m.	.0480	.0011	.0086	Oct. 27:				11:40 a. m.	.143	.0032	.0547
4:10 p. m.	.067	.0015	.0088	4:30 a. m. ²	.0111	.0002	.0267	12:00 m.	.120	.0027	.0557
4:20 p. m.	.067	.0015	.0090	4:10 a. m.	.0111	.0002		12:20 p. m.	.098	.0022	.0565
4:30 p. m.	.077	.0018	.0095	4:20 a. m.	.0180	.0004		12:40 p. m.	.088	.0020	.0572
4:40 p. m.	.077	.0018	.0096	4:30 a. m.	.0342	.0008	.0268	1:00 p. m.	.088	.0020	.0579
4:50 p. m.	.088	.0020	.0099	4:40 a. m.	.0480	.0011	.0270	1:20 p. m.	.088	.0020	.0586
5:00 p. m.	.077	.0018	.0102	4:45 a. m.	.067	.0015	.0271	1:40 p. m.	.088	.0020	.0593
5:20 p. m.	.067	.0015	.0108	4:50 a. m.	.088	.0020	.0272	2:00 p. m.	.077	.0018	.0599
5:40 p. m.	.057	.0013	.0113	4:52 a. m.	.108	.0024	.0273	2:20 p. m.	.077	.0018	.0605
5:50 p. m.	.057	.0013	.0115	4:54 a. m.	.132	.0030	.0274	2:40 p. m.	.077	.0018	.0611
6:00 p. m.	.067	.0015	.0117	4:57 a. m.	.155	.0035	.0276	3:00 p. m.	.077	.0018	.0617
6:20 p. m.	.067	.0015	.0122	5:00 a. m.	.195	.0044	.0278	3:20 p. m.	.077	.0018	.0623
6:30 p. m.	.077	.0018	.0125	5:05 a. m.	.238	.0054	.0282	3:40 p. m.	.067	.0015	.0629
6:40 p. m.	.067	.0015	.0128	5:06 a. m.	.285	.0065	.0283	3:50 p. m. ³	.067	.0015	.0631
7:00 p. m.	.057	.0013	.0133	5:10 a. m.	.285	.0065	.0287	5:00 p. m.	.057	.0013	.0633
7:05 p. m.	.0480	.0011	.0134	5:13 a. m.	.32	.0073	.0290	6:30 p. m.	.0480	.0011	.0651
7:20 p. m.	.0400	.0009	.0136	5:15 a. m.	.41	.0093	.0293	8:00 p. m.	.0400	.0009	.0667
7:40 p. m.	.0342	.0008	.0139	5:20 a. m.	.48	.0109	.0301	10:00 p. m.	.0342	.0008	.0684
8:00 p. m.	.0251	.0006	.0141	5:30 a. m.	.39	.0089	.0317	12:00 p. m.	.0342	.0008	.0700
8:20 p. m.	.0251	.0006	.0143	5:35 a. m.	.34	.0077	.0324				

² Rain began.³ Rain ended.

TABLE 73.—Run-off from watershed 183 for selected storms, 1939

[Area 74.2 acres; rainfall measured at recording rain gages 110 and 119]

Date and time		Discharge ¹		Accumulated run-off	Date and time		Discharge ¹		Accumulated run-off	Date and time		Discharge ¹		Accumulated run-off
STORM OF FEB. 14-15, TOTAL RAINFALL 1.30 INCHES					STORM OF FEB. 14-15, TOTAL RAINFALL 1.30 INCHES—Continued					STORM OF FEB. 14-15, TOTAL RAINFALL 1.30 INCHES—Continued				
Feb. 14:		Sec.-ft.	In. per hr.	In.	Feb. 14—Con.		Sec.-ft.	In. per hr.	In.	Feb. 15—Con.		Sec.-ft.	In. per hr.	In.
8:15 p. m.-----		0.09	0.0012	0	11:00 p. m.-----		0.19	0.0025	0.0042	1:00 a. m.-----		0.97	0.0130	0.0152
8:20 p. m.-----		.09	.0012	.0001	11:20 p. m.-----		.22	.0029	.0051	1:10 a. m.-----		1.23	.0164	.0176
8:40 p. m.-----		.09	.0012	.0005	11:40 p. m.-----		.28	.0037	.0062	1:15 a. m.-----		1.40	.0187	.0191
9:00 p. m.-----		.09	.0012	.0009	12:00 p. m.-----		.35	.0047	.0076	1:20 a. m.-----		1.63	.0218	.0208
9:20 p. m.-----		.10	.0013	.0013	Feb. 15:					1:25 a. m.-----		1.90	.0254	.0228
9:40 p. m.-----		.10	.0013	.0017	12:20 a. m.-----		.44	.0059	.0094	1:30 a. m.-----		2.18	.0291	.0251
10:00 p. m.-----		.12	.0016	.0022	12:30 a. m.-----		.51	.0068	.0105	1:35 a. m.-----		2.57	.0343	.0278
10:20 p. m.-----		.14	.0019	.0028	12:40 a. m.-----		.62	.0083	.0118	1:40 a. m.-----		2.88	.0385	.0307
10:40 p. m.-----		.15	.0020	.0035	12:50 a. m.-----		.76	.0102	.0133	1:48 a. m.-----		3.60	.0481	.0365

¹ Observed flow without corrections for base flow.

TABLE 73.—Run-off from watershed 183 for selected storms, 1939—Continued

Date and time	Discharge	Accumulated run-off	Date and time	Discharge	Accumulated run-off	Date and time	Discharge	Accumulated run-off			
STORM OF FEB. 14-15, TOTAL RAINFALL 1.30 INCHES—Continued			STORM OF JUNE 18-19, TOTAL RAINFALL 3.02 INCHES—Continued			STORM OF JUNE 18-19, TOTAL RAINFALL 3.02 INCHES—Continued					
Feb. 15—Con.	Sec.-ft.	In. per hr.	In.	June 18—Con.	Sec.-ft.	In. per hr.	In.	June 19—Con.	Sec.-ft.	In. per hr.	In.
1:50 a. m.	3.90	0.0521	0.0382	11:37 a. m.	1.40	0.0187	0.0065	12:35 a. m.	6.76	0.0903	0.2005
2:00 a. m.	4.62	0.0617	0.0477	11:38 a. m.	1.51	0.0202	0.0068	12:37 a. m.	7.64	0.102	0.2037
2:10 a. m.	5.39	0.0720	0.0588	11:40 a. m.	1.66	0.0222	0.0075	12:38 a. m.	8.87	0.118	0.2055
2:20 a. m.	6.20	0.0828	0.0717	11:45 a. m.	2.10	0.0280	0.0096	12:40 a. m.	9.84	0.132	0.2097
2:30 a. m.	7.05	0.0942	0.0865	11:48 a. m.	2.52	0.0337	0.0111	12:42 a. m.	11.2	0.150	0.2144
2:40 a. m.	7.94	0.106	0.1032	11:50 a. m.	2.75	0.0367	0.0123	12:46 a. m.	12.2	0.163	0.2248
3:00 a. m.	8.55	0.114	0.1399	11:55 a. m.	3.02	0.0403	0.0155	12:47 a. m.	12.6	0.168	0.2276
3:15 a. m.	8.87	0.118	0.1690	12:00 m.	3.40	0.0454	0.0191	12:48 a. m.	13.0	0.174	0.2304
3:20 a. m.	8.87	0.118	0.1789	12:05 p. m.	3.60	0.0481	0.0230	12:49 a. m.	13.3	0.178	0.2333
3:23 a. m.	8.55	0.114	0.1847	12:10 p. m.	3.50	0.0468	0.0269	12:52 a. m.	13.7	0.183	0.2423
3:30 a. m.	7.64	0.102	0.1973	12:20 p. m.	3.12	0.0417	0.0343	12:55 a. m.	13.7	0.183	0.2515
3:35 a. m.	7.05	0.0942	0.2055	12:25 p. m.	3.07	0.0410	0.0377	1:00 a. m.	13.0	0.174	0.2664
3:40 a. m.	6.20	0.0828	0.2129	12:30 p. m.	3.21	0.0429	0.0412	1:03 a. m.	11.9	0.159	0.2747
3:45 a. m.	5.39	0.0720	0.2193	12:35 p. m.	3.65	0.0488	0.0450	1:08 a. m.	10.5	0.140	0.2872
3:50 a. m.	4.88	0.0652	0.2250	12:38 p. m.	4.13	0.0552	0.0476	1:10 a. m.	9.84	0.132	0.2917
4:00 a. m.	4.13	0.0552	0.2350	12:40 p. m.	4.13	0.0552	0.0494	1:15 a. m.	8.55	0.114	0.3019
4:05 a. m.	3.90	0.0521	0.2395	12:42 p. m.	3.50	0.0468	0.0596	1:20 a. m.	7.34	0.0981	0.3107
4:10 a. m.	3.12	0.0417	0.2434	12:52 p. m.	3.12	0.0417	0.0655	1:25 a. m.	6.20	0.0828	0.3182
4:20 a. m.	2.70	0.0361	0.2499	1:00 p. m.	2.66	0.0355	0.0719	1:30 a. m.	5.39	0.0720	0.3246
4:30 a. m.	2.39	0.0319	0.2556	1:10 p. m.	2.31	0.0309	0.0774	1:35 a. m.	4.62	0.0617	0.3302
4:40 a. m.	2.14	0.0286	0.2606	1:20 p. m.	2.06	0.0275	0.0798	1:40 a. m.	4.13	0.0552	0.3351
5:00 a. m.	1.82	0.0243	0.2694	1:25 p. m.	1.78	0.0238	0.0819	1:45 a. m.	3.65	0.0488	0.3394
5:20 a. m.	1.63	0.0218	0.2771	1:30 p. m.	1.40	0.0187	0.0854	1:49 a. m.	3.40	0.0454	0.3425
5:40 a. m.	1.48	0.0198	0.2840	1:40 p. m.	1.13	0.0151	0.0882	2:00 a. m.	2.84	0.0379	0.3501
6:00 a. m.	1.37	0.0183	0.2903	1:50 p. m.	0.94	0.0126	0.0905	2:05 a. m.	2.57	0.0343	0.3531
6:20 a. m.	1.26	0.0168	0.2962	2:00 p. m.	0.78	0.0104	0.0924	2:13 a. m.	2.27	0.0303	0.3574
6:40 a. m.	1.20	0.0160	0.3017	2:10 p. m.	0.66	0.0086	0.0940	2:20 a. m.	2.06	0.0275	0.3608
7:00 a. m.	1.13	0.0151	0.3069	2:20 p. m.	0.56	0.0075	0.0953	2:36 a. m.	1.74	0.0232	0.3676
7:20 a. m.	1.06	0.0142	0.3118	2:30 p. m.	0.51	0.0068	0.0965	2:40 a. m.	1.70	0.0227	0.3691
7:40 a. m.	1.00	0.0134	0.3164	2:40 p. m.	0.44	0.0059	0.0986	2:50 a. m.	1.59	0.0212	0.3728
8:00 a. m.	0.94	0.0126	0.3207	2:50 p. m.	0.37	0.0049	0.1004	3:00 a. m.	1.63	0.0218	0.3764
8:20 a. m.	0.87	0.0116	0.3247	3:00 p. m.	0.32	0.0043	0.1019	3:10 a. m.	1.78	0.0238	0.3802
8:40 a. m.	0.81	0.0108	0.3284	3:20 p. m.	0.28	0.0037	0.1032	3:20 a. m.	2.10	0.0280	0.3845
9:00 a. m.	0.78	0.0104	0.3319	3:40 p. m.	0.26	0.0035	0.1044	3:27 a. m.	2.48	0.0331	0.3881
9:20 a. m.	0.76	0.0102	0.3353	4:00 p. m.	0.24	0.0032	0.1055	3:30 a. m.	2.66	0.0355	0.3898
9:40 a. m.	0.73	0.0098	0.3386	4:20 p. m.	0.22	0.0029	0.1065	3:35 a. m.	3.07	0.0410	0.3930
10:00 a. m.	0.70	0.0094	0.3418	4:40 p. m.	0.20	0.0027	0.1074	3:40 a. m.	3.60	0.0481	0.3967
10:15 a. m.	0.67	0.0090	0.3441	5:00 p. m.	0.20	0.0027	0.1083	3:45 a. m.	4.38	0.0585	0.4011
11:30 a. m.	0.62	0.0083	0.3549	5:20 p. m.	0.20	0.0027	0.1092	3:50 a. m.	4.88	0.0652	0.4063
1:00 p. m.	0.56	0.0075	0.3667	5:40 p. m.	0.19	0.0025	0.1101	4:00 a. m.	5.13	0.0685	0.4174
2:40 p. m.	0.54	0.0072	0.3790	6:00 p. m.	0.19	0.0025	0.1107	4:10 a. m.	4.88	0.0652	0.4285
4:40 p. m.	0.49	0.0065	0.3926	6:20 p. m.	0.20	0.0027	0.1109	4:20 a. m.	4.62	0.0617	0.4391
7:00 p. m.	0.44	0.0059	0.4071	6:40 p. m.	0.22	0.0029	0.1111	4:25 a. m.	4.13	0.0552	0.4440
8:00 p. m.	0.41	0.0055	0.4128	6:45 p. m.	0.26	0.0035	0.1116	4:35 a. m.	3.65	0.0488	0.4527
9:00 p. m.	0.39	0.0052	0.4182	6:55 p. m.	0.30	0.0040	0.1119	4:40 a. m.	3.55	0.0474	0.4567
12:00 p. m.	0.35	0.0047	0.4332	7:00 p. m.	0.41	0.0055	0.1123	4:50 a. m.	3.12	0.0417	0.4641
Feb. 16:				7:05 p. m.	0.59	0.0079	0.1127	5:00 a. m.	2.79	0.0373	0.4707
2:00 a. m.	0.32	0.0043	0.4422	7:13 p. m.	0.73	0.0098	0.1133	5:10 a. m.	2.48	0.0331	0.4766
4:00 a. m.	0.30	0.0040	0.4506	7:18 p. m.	0.87	0.0116	0.1142	5:20 a. m.	2.22	0.0296	0.4818
5:30 a. m.	0.28	0.0037	0.4563	7:20 p. m.	1.00	0.0134	0.1146	5:30 a. m.	1.98	0.0264	0.4865
7:00 a. m.	0.26	0.0035	0.4617	7:22 p. m.	1.10	0.0147	0.1151	5:40 a. m.	1.82	0.0243	0.4907
8:00 a. m.	0.26	0.0035	0.4652	7:26 p. m.	1.26	0.0168	0.1162	6:00 a. m.	1.55	0.0207	0.4982
9:00 a. m.	0.28	0.0037	0.4688	7:35 p. m.	1.44	0.0192	0.1189	6:20 a. m.	1.70	0.0227	0.5054
10:30 a. m.	0.26	0.0035	0.4742	7:40 p. m.	1.44	0.0192	0.1205	6:40 a. m.	1.20	0.0160	0.5119
12:00 m.	0.26	0.0035	0.4794	7:50 p. m.	1.30	0.0174	0.1235	7:00 a. m.	1.10	0.0147	0.5170
1:30 p. m.	0.26	0.0035	0.4846	7:56 p. m.	1.48	0.0198	0.1254	7:20 a. m.	1.03	0.0138	0.5217
4:00 p. m.	0.28	0.0037	0.4936	8:00 p. m.	1.48	0.0198	0.1267	7:40 a. m.	1.00	0.0134	0.5262
6:30 p. m.	0.26	0.0035	0.5026	8:05 p. m.	1.48	0.0198	0.1283	7:50 a. m.	1.00	0.0134	0.5284
8:00 p. m.	0.24	0.0032	0.5077	8:20 p. m.	1.26	0.0168	0.1329	8:00 a. m.	1.06	0.0142	0.5307
12:00 p. m.	0.22	0.0029	0.5197	8:30 p. m.	1.13	0.0151	0.1356	8:20 a. m.	1.23	0.0164	0.5358
STORM OF JUNE 18-19, TOTAL RAINFALL 3.02 INCHES				8:40 p. m.	1.03	0.0138	0.1380	8:30 a. m.	1.30	0.0174	0.5386
June 18:				8:50 p. m.	0.90	0.0120	0.1402	8:40 a. m.	1.33	0.0178	0.5415
7:30 a. m.	0.0007	T	0	9:00 p. m.	0.81	0.0108	0.1421	8:45 a. m.	1.33	0.0178	0.5430
8:00 a. m.	0.0007	T	0	9:20 p. m.	0.70	0.0094	0.1455	9:00 a. m.	1.33	0.0178	0.5474
8:55 a. m.	0.024	0.0003	0.0001	9:32 p. m.	0.64	0.0086	0.1473	9:05 a. m.	1.33	0.0178	0.5489
9:00 a. m.	0.031	0.0004	0.0001	9:40 p. m.	0.64	0.0086	0.1484	9:20 a. m.	1.23	0.0164	0.5532
9:20 a. m.	0.041	0.0005	0.0002	9:50 p. m.	0.64	0.0086	0.1498	9:40 a. m.	1.10	0.0147	0.5584
9:30 a. m.	0.053	0.0007	0.0003	10:00 p. m.	0.73	0.0098	0.1513	10:00 a. m.	0.97	0.0130	0.5630
9:40 a. m.	0.077	0.0010	0.0004	10:10 p. m.	0.81	0.0108	0.1530	10:30 a. m.	0.81	0.0108	0.5690
10:00 a. m.	0.09	0.0012	0.0008	10:20 p. m.	0.97	0.0130	0.1550	11:00 a. m.	0.70	0.0094	0.5740
10:10 a. m.	0.10	0.0013	0.0010	10:27 p. m.	1.06	0.0142	0.1566	12:00 m.	0.56	0.0075	0.5824
10:20 a. m.	0.09	0.0012	0.0012	10:40 p. m.	1.13	0.0151	0.1598	1:00 p. m.	0.49	0.0065	0.5894
10:30 a. m.	0.12	0.0016	0.0014	10:55 p. m.	1.16	0.0155	0.1636	2:00 p. m.	0.41	0.0055	0.5954
10:40 a. m.	0.12	0.0016	0.0017	11:00 p. m.	1.20	0.0160	0.1649	3:00 p. m.	0.35	0.0047	0.6005
10:50 a. m.	0.12	0.0016	0.0020	11:05 p. m.	1.23	0.0164	0.1663	4:00 p. m.	0.30	0.0040	0.6049
11:00 a. m.	0.15	0.0020	0.0023	11:20 p. m.	1.16	0.0155	0.1703	5:00 p. m.	0.26	0.0035	0.6087
11:05 a. m.	0.19	0.0025	0.0025	11:40 p. m.	1.00	0.0134	0.1751	6:00 p. m.	0.22	0.0029	0.6179
11:08 a. m.	0.22	0.0029	0.0026	11:45 p. m.	0.97	0.0130	0.1762	6:10 p. m.	0.24	0.0032	0.6124
11:10 a. m.	0.24	0.0032	0.0027	12:00 p. m.	1.13	0.0151	0.1797	8:00 p. m.	0.22	0.0029	0.6179
11:17 a. m.	0.30	0.0040	0.0031	June 19:				9:00 p. m.	0.22	0.0029	0.6208
11:20 a. m.	0.37	0.0049	0.0033	12:08 a. m.	1.33	0.0178	0.1819	12:00 p. m.	0.20	0.0027	0.6292
11:23 a. m.	0.49	0.0065	0.0036	12:12 a. m.	1.59	0.0212	0.1832	STORM OF JULY 8, TOTAL RAINFALL 2.00 INCHES			
11:25 a. m.	0.62	0.0083	0.0038	12:15 a. m.	1.78	0.0238	0.1843	July 8:			
11:27 a. m.	0.76	0.0102	0.0041	12:20 a. m.	2.22	0.0296	0.1865	5:14 a. m. ²	0.0100	0.0001	0
11:30 a. m.	0.94	0.0126	0.0047	12:22 a. m.	2.61	0.0349	0.1876	5:20 a. m.	0.041	0.0005	0
11:33 a. m.	1.16	0.0155	0.0054	12:23 a. m.	2.79	0.0373	0.1882	5:40 a. m.	0.053	0.0007	0.0002
				12:25 a. m.	3.12	0.0417	0.1895				
				12:26 a. m.	3.55	0.0474	0.1902				
				12:28 a. m.	4.38	0.0585	0.1920				
				12:30 a. m.	4.88	0.0652	0.1941				
				12:33 a. m.	5.93	0.0792	0.1977				

TABLE 73.—Run-off from watershed 183 for selected storms, 1939—Continued

STORM OF JULY 8, TOTAL RAINFALL 2.00 INCHES—Continued				STORM OF JULY 8, TOTAL RAINFALL 2.00 INCHES—Continued				STORM OF OCT. 25-27, TOTAL RAINFALL 3.76 INCHES—Continued			
Date and time	Discharge	Accumulated run-off		Date and time	Discharge	Accumulated run-off		Date and time	Discharge	Accumulated run-off	
July 8—Con.	Sec.-ft.	In. per hr.	In.	July 8—Con.	Sec.-ft.	In. per hr.	In.	Oct. 26—Con.	Sec.-ft.	In. per hr.	In.
5:45 a. m.	0.053	0.0007	0.0003	12:46 p. m.	2.18	0.0291	0.2827	9:06 a. m.	0.37	0.0049	0.0091
5:49 a. m.	.064	.0008	.0004	12:47 p. m.	3.02	.0403	.2833	9:08 a. m.	.39	.0052	.0093
5:50 a. m.	.077	.0010	.0004	12:48 p. m.	3.40	.0454	.2840	9:09 a. m.	.84	.0112	.0095
5:53 a. m.	.09	.0012	.0005	12:49 p. m.	3.65	.0488	.2848	9:10 a. m.	.97	.0130	.0097
5:55 a. m.	.10	.0013	.0005	12:50 p. m.	5.13	.0685	.2858	9:13 a. m.	1.06	.0142	.0104
6:00 a. m.	.12	.0016	.0006	12:55 p. m.	6.76	.0903	.2922	9:20 a. m.	.97	.0130	.0120
6:05 a. m.	.12	.0016	.0007	12:58 p. m.	8.55	.114	.2973	9:30 a. m.	.73	.0098	.0139
6:12 a. m.	.14	.0019	.0009	12:59 p. m.	10.2	.136	.2994	9:40 a. m.	.51	.0068	.0152
6:18 a. m.	.15	.0020	.0011	1:00 p. m.	12.2	.163	.3019	9:44 a. m.	.44	.0059	.0156
6:20 a. m.	.19	.0025	.0012	1:01 p. m.	14.5	.194	.3049	9:45 a. m.	.59	.0079	.0158
6:21 a. m.	.22	.0029	.0012	1:02 p. m.	16.4	.219	.3083	9:46 a. m.	.84	.0112	.0159
6:27 a. m.	.26	.0035	.0015	1:05 p. m.	21.5	.287	.3210	9:47 a. m.	1.03	.0138	.0159
6:29 a. m.	.30	.0040	.0016	1:06 p. m.	26.1	.349	.3263	9:48 a. m.	1.13	.0151	.0164
6:30 a. m.	.37	.0049	.0017	1:10 p. m.	32.0	.428	.3522	9:50 a. m.	1.16	.0155	.0169
6:31 a. m.	.44	.0059	.0018	1:12 p. m.	32.5	.434	.3666	9:55 a. m.	1.20	.0155	.0182
6:32 a. m.	.51	.0068	.0019	1:20 p. m.	29.5	.394	.4218	10:00 a. m. ³	.90	.0120	.0193
6:36 a. m.	.59	.0079	.0024	1:25 p. m.	23.3	.311	.4512	10:05 a. m.	.76	.0102	.0202
6:40 a. m.	.59	.0079	.0029	1:30 p. m.	17.6	.235	.4710	10:10 a. m.	.64	.0086	.0210
6:50 a. m.	.49	.0065	.0041	1:35 p. m.	14.5	.194	.4889	10:20 a. m.	.49	.0065	.0223
7:00 a. m.	.39	.0052	.0051	1:40 p. m.	11.2	.150	.5032	10:25 a. m.	.41	.0055	.0228
7:05 a. m.	.35	.0047	.0055	1:45 p. m.	9.19	.123	.5146	10:30 a. m.	.37	.0049	.0232
7:15 a. m.	.28	.0037	.0062	1:50 p. m.	7.34	.0981	.5238	10:40 a. m.	.28	.0037	.0239
7:20 a. m.	.24	.0032	.0065	1:55 p. m.	6.20	.0828	.5313	10:50 a. m.	.24	.0032	.0245
7:30 a. m.	.20	.0027	.0070	2:00 p. m.	5.39	.0720	.5377	10:55 a. m.	.20	.0027	.0248
7:35 a. m.	.19	.0025	.0072	2:10 p. m.	3.90	.0521	.5480	11:00 a. m.	.19	.0025	.0250
7:40 a. m.	.19	.0025	.0074	2:16 p. m.	3.36	.0449	.5528	11:10 a. m.	.15	.0020	.0254
7:45 a. m.	.22	.0029	.0076	2:20 p. m.	3.07	.0410	.5557	11:25 a. m.	.12	.0016	.0258
7:50 a. m.	.26	.0035	.0079	2:30 p. m.	2.52	.0337	.5619	11:35 a. m.	.09	.0012	.0260
7:53 a. m.	.30	.0040	.0081	2:40 p. m.	2.10	.0280	.5670	11:45 a. m.	.077	.0010	.0262
7:57 a. m.	.35	.0047	.0084	2:50 p. m.	1.78	.0238	.5713	12:00 m.	.064	.0008	.0264
7:58 a. m.	.59	.0079	.0085	3:00 p. m.	1.55	.0207	.5750	12:20 p. m.	.053	.0007	.0270
7:59 a. m.	.76	.0102	.0087	3:10 p. m.	1.37	.0183	.5782	1:30 p. m.	.041	.0005	.0274
8:00 a. m.	.94	.0126	.0089	3:20 p. m.	1.23	.0164	.5811	12:00 p. m.	.041	.0005	.0327
8:01 a. m.	1.16	.0155	.0091	3:30 p. m.	1.10	.0147	.5837	Oct. 27:			
8:02 a. m.	1.26	.0168	.0094	3:40 p. m.	1.00	.0134	.5860	4:03 a. m. ²	.041	.0005	.0347
8:03 a. m.	1.55	.0207	.0097	4:00 p. m.	.84	.0112	.5901	4:44 a. m.	.041	.0005	.0350
8:04 a. m.	1.82	.0243	.0101	4:20 p. m.	.73	.0098	.5936	4:46 a. m.	.064	.0008	
8:05 a. m.	2.10	.0280	.0105	4:40 p. m.	.64	.0086	.5967	4:47 a. m.	.10	.0013	
8:06 a. m.	2.35	.0314	.0110	5:00 p. m.	.59	.0079	.5994	4:50 a. m.	.14	.0019	.0351
8:07 a. m.	2.75	.0367	.0116	5:20 p. m.	.54	.0072	.6019	4:52 a. m.	.15	.0020	.0352
8:08 a. m.	8.55	.114	.0129	5:40 p. m.	.49	.0065	.6042	4:56 a. m.	.15	.0020	.0353
8:09 a. m.	9.51	.127	.0149	6:00 p. m.	.44	.0059	.6063	4:57 a. m.	.24	.0032	.0353
8:10 a. m.	11.5	.154	.0172	6:40 p. m.	.39	.0052	.6100	4:58 a. m.	.30	.0040	.0354
8:11 a. m.	14.1	.188	.0200	7:20 p. m.	.35	.0047	.6133	4:59 a. m.	.35	.0047	.0355
8:12 a. m.	18.0	.240	.0236	8:20 p. m.	.30	.0040	.6177	5:00 a. m.	.44	.0059	.0356
8:13 a. m.	22.4	.299	.0281	9:20 p. m.	.26	.0035	.6215	5:01 a. m.	.54	.0072	.0357
8:14 a. m.	27.0	.361	.0336	10:10 p. m.	.24	.0032	.6243	5:04 a. m.	.78	.0104	.0361
8:16 a. m.	35.7	.477	.0476	11:00 p. m.	.22	.0029	.6268	5:06 a. m.	1.10	.0147	.0365
8:19 a. m.	37.8	.505	.0722	12:00 p. m.	.20	.0027	.6296	5:08 a. m.	1.48	.0198	.0371
8:20 a. m.	37.3	.498	.0806	July 9:				5:10 a. m.	1.86	.0248	.0378
8:25 a. m.	32.0	.428	.1192	3:00 a. m.	.19	.0025	.6374	5:12 a. m.	2.22	.0296	.0387
8:30 a. m.	25.1	.335	.1510	8:00 a. m.	.17	.0023	.6494	5:16 a. m.	2.88	.0385	.0410
8:32 a. m.	22.4	.299	.1616	9:00 a. m.	.17	.0023	.6517	5:18 a. m.	3.12	.0417	.0423
8:35 a. m.	19.3	.258	.1755	10:30 a. m.	.15	.0020	.6550	5:20 a. m.	3.65	.0488	.0438
8:38 a. m.	16.4	.219	.1874	12:00 m.	.14	.0019	.6580	5:24 a. m.	3.90	.0521	.0465
8:40 a. m.	14.1	.188	.1942	2:00 p. m.	.12	.0016	.6616	5:26 a. m.	4.88	.0652	.0486
8:45 a. m.	10.8	.144	.2081	5:00 p. m.	.10	.0013	.6658	5:32 a. m.	5.66	.0756	.0556
8:50 a. m.	8.24	.110	.2187	12:00 p. m.	.10	.0013	.6749	5:37 a. m.	5.93	.0792	.0620
8:55 a. m.	6.48	.0866	.2269	STORM OF OCT. 25-27, TOTAL RAINFALL 3.76 INCHES							
9:00 a. m.	5.39	.0720	.2335	Oct. 25:				5:40 a. m.	5.66	.0756	.0659
9:06 a. m.	4.13	.0552	.2399	12:29 a. m. ²				5:44 a. m.	4.88	.0652	.0706
9:10 a. m.	3.65	.0488	.2434	6:40 p. m. ⁴	0.12	0.0016	0	5:50 a. m.	3.90	.0521	.0765
9:15 a. m.	3.12	.0417	.2472	7:00 p. m.	.10	.0013	.0005	5:54 a. m.	2.84	.0379	.0795
9:20 a. m.	2.70	.0361	.2504	7:20 p. m.	.10	.0013	.0009	5:58 a. m.	2.35	.0314	.0818
9:22 a. m.	2.39	.0319	.2515	7:40 p. m.	.09	.0012	.0013	6:00 a. m.	2.18	.0291	.0828
9:28 a. m.	2.02	.0270	.2544	7:50 p. m.	.077	.0010	.0015	6:05 a. m.	1.78	.0238	.0850
9:40 a. m.	1.51	.0202	.2591	8:00 p. m.	.064	.0008	.0017	6:10 a. m.	1.65	.0207	.0869
9:50 a. m.	1.20	.0160	.2621	8:20 p. m.	.053	.0007	.0017	6:15 a. m.	1.26	.0168	.0885
10:00 a. m.	1.00	.0134	.2645	8:30 p. m.	.053	.0007	.0018	6:20 a. m.	1.13	.0151	.0898
10:10 a. m.	.84	.0112	.2665	8:40 p. m.	.053	.0007	.0019	6:25 a. m.	.97	.0130	.0910
10:20 a. m.	.76	.0102	.2683	8:45 a. m.	.041	.0005	.0021	6:30 a. m.	.84	.0112	.0920
10:30 a. m.	.64	.0086	.2699	8:50 a. m.	.041	.0005	.0036	6:35 a. m.	.73	.0098	.0929
10:40 a. m.	.59	.0079	.2713	8:55 a. m.	.041	.0005	.0036	6:40 a. m.	.64	.0086	.0937
10:50 a. m.	.51	.0068	.2725	9:00 p. m.	.041	.0005	.0036	6:50 a. m.	.54	.0072	.0950
11:00 a. m.	.46	.0061	.2736	9:05 a. m.	.041	.0005	.0036	7:00 a. m.	.44	.0059	.0961
11:20 a. m.	.39	.0052	.2755	9:10 a. m.	.041	.0005	.0036	7:10 a. m.	.37	.0049	.0970
11:40 a. m.	.35	.0047	.2772	9:15 a. m.	.041	.0005	.0036	7:20 a. m.	.30	.0040	.0977
12:00 m.	.30	.0040	.2787	9:20 a. m.	.041	.0005	.0036	7:30 a. m.	.26	.0035	.0983
12:20 p. m.	.26	.0035	.2800	Oct. 26:				7:40 a. m.	.22	.0029	.0988
12:30 p. m.	.24	.0032	.2806	8:47 a. m.	.041	.0005	.0080	8:00 a. m.	.20	.0027	.0997
12:31 p. m.	.26	.0035	.2807	8:48 a. m.	.064	.0008		8:20 a. m.	.19	.0025	.1006
12:32 p. m.	.30	.0040	.2808	8:49 a. m.	.09	.0012		8:30 a. m.	.19	.0025	.1010
12:33 p. m.	.35	.0047	.2809	8:50 a. m.	.12	.0016	.0081	8:40 a. m.	.20	.0027	.1014
12:35 p. m.	.39	.0052	.2811	8:51 a. m.	.15	.0020		8:45 a. m.	.24	.0032	.1024
12:36 p. m.	.44	.0059	.2812	8:52 a. m.	.19	.0025		9:00 a. m.	.28	.0037	.1036
12:40 p. m.	.49	.0065	.2816	8:53 a. m.	.20	.0027	.0082	9:20 a. m.	.39	.0052	.1043
12:42 p. m.	.51	.0068	.2818	8:54 a. m.	.26	.0035	.0083	9:40 a. m.	.51	.0068	.1053
12:43 p. m.	.62	.0083	.2819	8:57 a. m.	.28	.0037	.0085	9:50 a. m.	.73	.0098	.1067
12:45 p. m.	1.40	.0187	.2823	9:00 a. m.	.28	.0037	.0087	9:55 a. m.	.94	.0126	.1076
				9:03 a. m.	.28	.0037	.0089	10:00 a. m.	1.06	.0142	.1087

² Rain began.³ Rain ended.⁴ No record between 12:29 a. m. and 6:40 p. m.

TABLE 73.—Run-off from watershed 183 for selected storms, 1939—Continued

Date and time	Discharge	Accumulated run-off	Date and time	Discharge	Accumulated run-off	Date and time	Discharge	Accumulated run-off			
STORM OF OCT. 25-27, TOTAL RAINFALL 3.76 INCHES—Continued			STORM OF OCT. 25-27, TOTAL RAINFALL 3.76 INCHES—Continued			STORM OF OCT. 26-27, TOTAL RAINFALL 3.76 INCHES—Continued					
Oct. 27—Con.	Sec.-ft.	In. per hr.	In.	Oct. 27—Con.	Sec.-ft.	In. per hr.	In.	Oct. 27—Con.	Sec.-ft.	In. per hr.	In.
10:10 a. m.-----	1.00	0.0134	0.1110	1:00 p. m.-----	0.14	0.0019	0.1322	4:20 p. m.-----	0.17	0.0023	0.1389
10:15 a. m.-----	1.20	.0160	.1130	1:20 p. m.-----	.12	.0016	.1328	4:40 p. m.-----	.15	.0020	.1394
10:20 a. m.-----	1.16	.0155	.1135	1:35 p. m.-----	.10	.0013	.1332	5:00 p. m.-----	.12	.0016	.1402
10:25 a. m.-----	1.10	.0147	.1155	1:36 p. m.-----	.14	.0019	.1332	5:20 p. m.-----	.12	.0016	.1407
10:36 a. m.-----	1.30	.0174	.1176	1:40 p. m.-----	.20	.0027	.1334	5:40 p. m.-----	.10	.0013	.1412
10:40 a. m.-----	1.23	.0164	.1188	1:50 p. m.-----	.15	.0020	.1338	6:00 p. m.-----	.09	.0012	.1416
10:50 a. m.-----	1.00	.0134	.1212	2:00 p. m.-----	.14	.0019	.1341	6:20 p. m.-----	.077	.0010	.1420
11:00 a. m.-----	.78	.0104	.1232	2:20 p. m.-----	.14	.0019	.1347	6:40 p. m.-----	.077	.0010	.1420
11:10 a. m.-----	.64	.0086	.1248	2:40 p. m.-----	.14	.0019	.1353	7:00 p. m.-----	.077	.0010	.1426
11:20 a. m.-----	.54	.0072	.1261	3:00 p. m.-----	.14	.0019	.1359	7:20 p. m.-----	.064	.0008	.1429
11:30 a. m.-----	.44	.0059	.1272	3:20 p. m.-----	.14	.0019	.1365	7:40 p. m.-----	.064	.0008	.1432
11:40 a. m.-----	.37	.0049	.1281	3:36 p. m.-----	.14	.0019	.1370	8:00 p. m. ³ -----	.053	.0007	.1435
12:00 m.-----	.28	.0037	.1293	3:40 p. m.-----	.19	.0025	.1371	8:20 p. m.-----	.053	.0007	.1437
12:20 p. m.-----	.22	.0029	.1306	3:50 p. m.-----	.22	.0029	.1375	10:30 p. m.-----	.041	.0005	.1450
12:40 p. m.-----	.19	.0025	.1315	4:00 p. m.-----	.22	.0029	.1380	12:00 p. m.-----	.041	.0005	.1458

³ Rain ended.

TABLE 74.—Run-off from watershed 196 for selected storms, 1939

[Area 303 acres; rainfall measured at recording rain gages Y102, meteorological station, 107, 109, 110, 113, 115, 116]

Date and time		Discharge ¹		Accumulated run-off	Date and time		Discharge ¹		Accumulated run-off	Date and time		Discharge ¹		Accumulated run-off
STORM OF FEB. 14-15, TOTAL RAINFALL 1.18 INCHES					STORM OF FEB. 14-15, TOTAL RAINFALL 1.18 INCHES—Continued					STORM OF JUNE 18-19, TOTAL RAINFALL 3.12 INCHES—Continued				
Feb. 14:		Sec.-ft.	In. per hr.	In.	Feb. 15—Con.		Sec.-ft.	In. per hr.	In.	June 18—Con.		Sec.-ft.	In. per hr.	In.
8:20 p. m.-----		0.661	0.0022	0	4:00 p. m.-----		2.84	0.0093	0.3975	10:35 a. m.-----		2.23	0.0073	0.0071
8:40 p. m.-----		.695	.0023	.0007	5:00 p. m.-----		2.61	.0085	.4064	10:40 a. m.-----		2.14	.0070	.0077
9:00 p. m.-----		.695	.0023	.0015	7:00 p. m.-----		2.41	.0079	.4228	10:50 a. m.-----		2.05	.0067	.0088
9:20 p. m.-----		.729	.0024	.0023	8:00 p. m.-----		2.23	.0073	.4304	11:00 a. m.-----		2.23	.0073	.0100
9:40 p. m.-----		.729	.0024	.0031	10:00 p. m.-----		2.05	.0067	.4444	11:10 a. m.-----		3.34	.0109	.0115
10:00 p. m.-----		.763	.0025	.0039	12:00 p. m.-----		1.86	.0061	.4572	11:20 a. m.-----		4.52	.0148	.0136
10:20 p. m.-----		.797	.0026	.0048	Feb. 16:					11:23 a. m.-----		5.53	.0181	.0144
10:40 p. m.-----		.872	.0028	.0057	1:00 a. m.-----		1.77	.0058	.4632	11:25 a. m.-----		7.19	.0235	.0151
11:00 p. m.-----		.921	.0030	.0067	2:00 a. m.-----		1.54	.0050	.4686	11:26 a. m.-----		8.93	.0292	.0155
11:20 p. m.-----		1.08	.0035	.0078	3:00 a. m.-----		1.47	.0048	.4735	11:27 a. m.-----		10.9	.0357	.0160
11:40 p. m.-----		1.26	.0041	.0091	4:00 a. m.-----		1.40	.0046	.4782	11:28 a. m.-----		13.3	.0435	.0167
12:00 p. m.-----		1.54	.0050	.0106	6:00 a. m.-----		1.33	.0044	.4872	11:29 a. m.-----		15.8	.0517	.0175
Feb. 15:					8:00 a. m.-----		1.26	.0041	.4956	11:30 a. m.-----		18.4	.0602	.0185
12:20 a. m.-----		1.95	.0064	.0125	9:00 a. m.-----		1.33	.0044	.4998	11:31 a. m.-----		21.0	.0687	.0196
12:40 a. m.-----		2.51	.0082	.0149	10:00 a. m.-----		1.54	.0050	.5045	11:32 a. m.-----		23.0	.0752	.0208
1:00 a. m.-----		3.64	.0119	.0182	11:00 a. m.-----		1.69	.0055	.5097	11:33 a. m.-----		24.9	.0814	.0221
1:10 a. m.-----		4.52	.0148	.0204	12:00 m.-----		1.77	.0058	.5153	11:40 a. m.-----		25.2	.0824	.0319
1:20 a. m.-----		5.91	.0193	.0232	1:00 p. m.-----		1.62	.0053	.5209	11:48 a. m.-----		25.5	.0834	.0427
1:30 a. m.-----		8.16	.0267	.0270	2:00 p. m.-----		1.54	.0050	.5261	11:50 a. m.-----		25.5	.0834	.0455
1:40 a. m.-----		11.6	.0380	.0324	5:00 p. m.-----		1.47	.0048	.5408	12:00 m.-----		23.6	.0772	.0591
1:50 a. m.-----		9.19	.0301	.0381	7:00 p. m.-----		1.40	.0046	.5502	12:05 p. m.-----		21.7	.0710	.0657
2:00 a. m.-----		20.2	.0660	.0461	9:00 p. m.-----		1.26	.0041	.5590	12:10 p. m.-----		19.3	.0632	.0711
2:15 a. m.-----		23.6	.0772	.0640	12:00 p. m.-----		1.26	.0041	.5713	12:15 p. m.-----		16.7	.0546	.0760
2:20 a. m.-----		23.9	.0782	.0702	STORM OF JUNE 18-19, TOTAL RAINFALL 3.12 INCHES					12:20 p. m.-----		14.7	.0481	.0803
2:40 a. m.-----		26.9	.0880	.0976	June 18:					12:30 p. m.-----		11.6	.0380	.0875
3:00 a. m.-----		28.6	.0935	.1276	7:30 a. m.-----		0.050	0.0002	0	12:35 p. m.-----		10.6	.0347	.0905
3:20 a. m.-----		27.6	.0902	.1579	7:40 a. m.-----		.054	.0002	0	12:40 p. m.-----		10.9	.0357	.0934
3:30 a. m.-----		25.2	.0824	.1726	8:00 a. m.-----		.066	.0002	.0001	12:43 p. m.-----		11.2	.0366	.0952
3:40 a. m.-----		22.1	.0723	.1858	8:10 a. m.-----		.082	.0003		12:50 p. m.-----		16.7	.0546	.1005
3:50 a. m.-----		18.4	.0602	.1971	8:20 a. m.-----		.088	.0003		12:55 p. m.-----		17.6	.0576	.1052
4:00 a. m.-----		15.1	.0494	.2062	8:40 a. m.-----		.102	.0003	.0002	1:00 p. m.-----		15.8	.0517	.1098
4:20 a. m.-----		11.6	.0380	.2208	8:47 a. m.-----		.118	.0004		1:05 p. m.-----		12.9	.0422	.1137
4:40 a. m.-----		9.75	.0319	.2325	8:50 a. m.-----		.138	.0004		1:10 p. m.-----		10.9	.0357	.1169
5:00 a. m.-----		8.67	.0284	.2426	8:55 a. m.-----		.170	.0006		1:20 p. m.-----		7.90	.0258	.1220
5:20 a. m.-----		7.90	.0258	.2516	9:00 a. m.-----		.210	.0007	.0002	1:30 p. m.-----		5.91	.0193	.1258
5:40 a. m.-----		7.43	.0243	.2599	9:10 a. m.-----		.429	.0014	.0004	1:40 p. m.-----		4.80	.0157	.1287
6:00 a. m.-----		6.72	.0220	.2676	9:20 a. m.-----		.360	.0012	.0006	2:00 p. m.-----		3.34	.0109	.1331
6:20 a. m.-----		6.32	.0207	.2747	9:30 a. m.-----		.406	.0013	.0008	2:20 p. m.-----		2.61	.0085	.1363
6:40 a. m.-----		6.11	.0200	.2815	9:31 a. m.-----		.503	.0016		2:40 p. m.-----		2.14	.0070	.1389
7:00 a. m.-----		5.71	.0187	.2880	9:32 a. m.-----		.627	.0020		3:00 p. m.-----		1.86	.0061	.1411
7:20 a. m.-----		5.35	.0175	.2940	9:33 a. m.-----		.763	.0025		3:20 p. m.-----		1.62	.0053	.1430
7:40 a. m.-----		5.16	.0169	.2997	9:34 a. m.-----		.921	.0030		3:40 p. m.-----		1.40	.0046	.1447
8:00 a. m.-----		5.16	.0169	.3053	9:35 a. m.-----		1.08	.0035	.0009	4:00 p. m.-----		1.26	.0041	.1462
8:20 a. m.-----		4.80	.0157	.3107	9:36 a. m.-----		1.26	.0041	.0010	4:20 p. m.-----		1.19	.0039	.1475
8:40 a. m.-----		4.66	.0152	.3158	9:37 a. m.-----		1.47	.0048	.0011	4:40 p. m.-----		1.08	.0035	.1487
9:00 a. m.-----		4.38	.0143	.3207	9:38 a. m.-----		1.69	.0055	.0012	5:00 p. m.-----		1.02	.0033	.1498
9:20 a. m.-----		4.24	.0139	.3254	9:39 a. m.-----		1.95	.0064	.0013	5:20 p. m.-----		.970	.0032	.1509
9:40 a. m.-----		4.10	.0134	.3299	9:40 a. m.-----		2.23	.0073	.0014	5:40 p. m.-----		.921	.0030	.1519
10:00 a. m.-----		3.95	.0129	.3343	9:45 a. m.-----		2.32	.0076	.0020	6:00 p. m.-----		.872	.0028	.1529
10:15 a. m.-----		3.80	.0124	.3375	9:50 a. m.-----		2.23	.0073	.0026	6:20 p. m.-----		.872	.0028	.1539
10:20 a. m.-----		3.80	.0124	.3385	10:00 a. m.-----		1.77	.0058	.0037	6:40 p. m.-----		1.26	.0041	.1548
10:40 a. m.-----		3.64	.0119	.3426	10:10 a. m.-----		1.54	.0050	.0046	7:00 p. m.-----		1.40	.0046	.1559
11:00 a. m.-----		3.49	.0114	.3465	10:20 a. m.-----		1.69	.0055	.0055	7:10 p. m.-----		1.86	.0061	.1575
11:20 a. m.-----		3.34	.0109	.3502	10:30 a. m.-----		2.14	.0070	.0065	7:20 p. m.-----		2.51	.0082	.1576
11:40 a. m.-----		3.22	.0105	.3538						7:21 p. m.-----		3.34	.0109	.1578
12:00 m.-----		3.22	.0105	.3573						7:22 p. m.-----		4.38	.0143	.1580
1:00 p. m.-----		3.22	.0105	.3678						7:23 p. m.-----		5.53	.0181	.1583
2:00 p. m.-----		3.10	.0101	.3781						7:24 p. m.-----		6.72	.0220	.1586
3:00 p. m.-----		2.97	.0097	.3880										

¹ Observed flow without corrections for base flow.

TABLE 74.—Run-off from watershed 196 for selected storms, 1939—Continued

STORM OF JUNE 18-19, TOTAL RAINFALL 3.12 INCHES—Continued				STORM OF JULY 8, TOTAL RAINFALL 2.17 INCHES				STORM OF JULY 8, TOTAL RAINFALL 2.17 INCHES—Continued			
Date and time	Discharge	Accumulated run-off		Date and time	Discharge	Accumulated run-off		Date and time	Discharge	Accumulated run-off	
June 18—Con.				July 8:				July 8—Con.			
7:30 p. m.	7.19	0.0235	0.1605	5:09 a. m. ²	0	0	0	1:30 p. m.	37.0	0.121	0.2979
7:35 p. m.	9.47	.0310	.1628	5:13 a. m.	.088	.0003	0	1:35 p. m.	32.6	.107	.3070
7:40 p. m.	9.19	.0301	.1654	5:20 a. m.	.148	.0005	0	1:40 p. m.	29.6	.0968	.3152
7:50 p. m.	7.90	.0258	.1701	5:21 a. m.	.182	.0006	0	1:50 p. m.	24.9	.0814	.3303
8:00 p. m.	6.32	.0207	.1740	5:22 a. m.	.226	.0007	0	2:00 p. m.	20.2	.0660	.3428
8:20 p. m.	6.52	.0213	.1810	5:23 a. m.	.280	.0009	0	2:10 p. m. ³	15.8	.0517	.3528
8:40 p. m.	5.35	.0175	.1875	5:24 a. m.	.337	.0011	0	2:20 p. m.	14.4	.0471	.3610
8:50 p. m.	3.34	.0109	.1899	5:25 a. m.	.406	.0013	0	2:40 p. m.	10.9	.0357	.3748
9:00 p. m.	3.10	.0101	.1917	5:26 a. m.	.452	.0015	0	3:00 p. m.	8.42	.0276	.3853
9:20 p. m.	2.61	.0085	.1948	5:27 a. m.	.503	.0016	0	3:20 p. m.	6.72	.0220	.3936
9:35 p. m.	2.41	.0079	.1968	5:28 a. m.	.559	.0018	0	3:40 p. m.	5.53	.0181	.4003
9:40 p. m.	2.41	.0079	.1975	5:29 a. m.	.627	.0020	0	4:00 p. m.	4.80	.0157	.4059
10:00 p. m.	2.61	.0085	.2002	5:30 a. m.	.695	.0023	0	4:20 p. m.	4.24	.0139	.4108
10:20 p. m.	3.34	.0109	.2034	5:31 a. m.	2.05	.0067	.0001	4:40 p. m.	3.64	.0119	.4151
10:25 p. m.	4.10	.0134	.2044	5:32 a. m.	4.80	.0157	.0003	5:00 p. m.	3.34	.0109	.4189
10:35 p. m.	4.10	.0134	.2066	5:33 a. m.	9.47	.0310	.0007	5:20 p. m.	3.22	.0105	.4225
10:40 p. m.	4.38	.0143	.2078	5:34 a. m.	16.7	.0546	.0014	5:40 p. m.	2.97	.0097	.4259
10:50 p. m.	4.52	.0148	.2102	5:35 a. m.	24.6	.0804	.0025	6:00 p. m.	2.72	.0089	.4290
11:00 p. m.	4.24	.0139	.2126	5:36 a. m.	31.3	.102	.0040	7:00 p. m.	2.32	.0076	.4372
11:20 p. m.	3.49	.0114	.2168	5:39 a. m.	26.3	.0860	.0087	8:00 p. m.	2.05	.0067	.4444
11:30 p. m.	3.34	.0109	.2187	5:40 a. m.	28.0	.0916	.0103	9:00 p. m.	1.86	.0061	.4508
11:40 p. m.	3.22	.0105	.2205	5:41 a. m.	29.6	.0968	.0119	10:00 p. m.	1.69	.0055	.4566
11:50 p. m.	3.22	.0105	.2223	5:45 a. m.	26.0	.0850	.0183	11:00 p. m.	1.54	.0050	.4618
11:55 p. m.	3.34	.0109	.2232	5:50 a. m.	21.0	.0687	.0244	12:00 p. m.	1.47	.0048	.4667
12:00 p. m.	3.64	.0119	.2242	5:55 a. m.	16.2	.0530	.0294	July 9:			
June 19:				6:00 a. m.	11.6	.0380	.0332	2:30 a. m.	1.26	.0041	.4777
12:10 a. m.	4.10	.0134	.0263	6:05 a. m.	9.19	.0301	.0360	5:00 a. m.	1.14	.0037	.4894
12:20 a. m.	5.53	.0181	.2289	6:10 a. m.	7.19	.0235	.0382	7:00 a. m.	1.02	.0033	.4964
12:22 a. m.	5.71	.0187	.2295	6:15 a. m.	5.71	.0187	.0400	10:00 a. m.	.921	.0030	.5060
12:23 a. m.	7.19	.0235	.2299	6:20 a. m.	4.52	.0148	.0414	11:00 a. m.	.831	.0027	.5088
12:24 a. m.	8.67	.0284	.2303	6:30 a. m.	3.10	.0101	.0435	12:00 m.	.797	.0026	.5114
12:25 a. m.	10.3	.0337	.2308	6:40 a. m.	2.23	.0073	.0449	1:30 p. m.	.729	.0024	.5152
12:30 a. m.	15.1	.0494	.2343	6:50 a. m.	1.77	.0058	.0460	3:00 p. m.	.627	.0020	.5185
12:32 a. m.	18.6	.0589	.2361	7:00 a. m.	1.40	.0046	.0469	6:00 p. m.	.559	.0018	.5242
12:34 a. m.	21.0	.0687	.2382	7:20 a. m.	1.02	.0033	.0482	12:00 p. m.	.559	.0018	.5350
12:36 a. m.	23.3	.0762	.2406	7:40 a. m.	.797	.0026	.0492	STORM OF OCTOBER 25-27, TOTAL RAINFALL 4.07 INCHES			
12:38 a. m.	25.2	.0824	.2432	7:44 a. m.	1.02	.0033	.0494	Oct. 25:			
12:40 a. m.	26.9	.0880	.2460	7:48 a. m.	1.33	.0044	.0497	12:19 a. m. ²	0.026	0.0001	0
12:50 a. m.	30.2	.0988	.2616	7:52 a. m.	1.69	.0055	.0500	12:20 a. m.	.030	.0001	0
12:55 a. m.	30.9	.1010	.2699	7:56 a. m.	2.14	.0070	.0504	12:30 a. m.	.036	.0001	0
1:00 a. m.	30.6	.1001	.2783	8:00 a. m.	2.61	.0085	.0509	12:40 a. m.	.042	.0001	0
1:20 a. m.	24.9	.0814	.3085	8:03 a. m.	3.34	.0109	.0514	1:00 a. m.	.046	.0002	.0001
1:30 a. m.	20.6	.0674	.3209	8:04 a. m.	6.11	.0200	.0517	1:20 a. m.	.042	.0001	.0001
1:40 a. m.	15.8	.0517	.3308	8:05 a. m.	10.3	.0337	.0521	1:40 a. m.	.039	.0001	.0002
2:00 a. m.	14.7	.0481	.3474	8:06 a. m.	15.8	.0517	.0528	2:00 a. m.	.039	.0001	.0004
2:20 a. m.	12.9	.0422	.3625	8:07 a. m.	22.4	.0732	.0539	2:20 a. m.	.039	.0001	.0007
2:40 a. m.	10.9	.0357	.3755	8:08 a. m.	27.3	.0893	.0553	2:40 a. m.	.039	.0001	
3:00 a. m.	9.19	.0301	.3865	8:09 a. m.	32.6	.107	.0570	3:00 a. m.	.039	.0001	
3:20 a. m.	8.67	.0284	.3962	8:10 a. m.	38.5	.126	.0589	3:20 a. m.	.039	.0001	.0008
3:30 a. m.	8.67	.0284	.4009	8:12 a. m.	46.0	.150	.0636	3:40 a. m.	.039	.0001	.0009
3:40 a. m.	9.47	.0310	.4059	8:14 a. m.	53.8	.176	.0691	4:00 a. m.	.042	.0001	.0009
3:50 a. m.	12.6	.0412	.4119	8:16 a. m.	62.1	.203	.0755	4:20 a. m.	.042	.0001	.0010
4:00 a. m.	18.4	.0602	.4203	8:20 a. m.	57.0	.186	.0855	4:40 a. m.	.046	.0002	.0010
4:05 a. m.	19.3	.0632	.4254	8:25 a. m.	50.7	.166	.0996	5:00 a. m.	.046	.0002	.0011
4:20 a. m.	17.6	.0576	.4405	8:30 a. m.	44.8	.146	.1121	5:20 a. m.	.046	.0002	.0011
4:30 a. m.	15.8	.0517	.4496	8:35 a. m.	39.3	.128	.1231	5:40 a. m.	.050	.0002	.0012
4:40 a. m.	15.4	.0504	.4581	8:40 a. m.	34.1	.112	.1317	6:00 a. m.	.050	.0002	.0012
5:00 a. m.	14.7	.0481	.4745	8:45 a. m.	29.9	.0978	.1411	6:20 a. m.	.050	.0002	.0013
5:20 a. m.	12.9	.0422	.4896	8:50 a. m.	26.0	.0850	.1484	7:00 a. m.	.054	.0002	.0014
5:40 a. m.	11.2	.0366	.5107	8:55 a. m.	23.0	.0752	.1548	7:20 a. m.	.058	.0002	.0014
6:00 a. m.	9.75	.0319	.5141	9:00 a. m.	19.3	.0632	.1603	7:40 a. m.	.062	.0002	.0015
6:20 a. m.	8.42	.0276	.5240	9:10 a. m.	13.6	.0445	.1693	8:00 a. m.	.066	.0002	.0016
6:40 a. m.	7.43	.0243	.5327	9:20 a. m.	9.19	.0301	.1755	8:20 a. m.	.071	.0002	.0016
7:00 a. m.	6.52	.0213	.5403	9:30 a. m.	7.43	.0243	.1800	8:40 a. m.	.071	.0002	.0017
7:20 a. m.	5.91	.0193	.5471	9:40 a. m.	5.91	.0193	.1836	9:00 a. m.	.071	.0002	.0018
7:40 a. m.	5.53	.0181	.5533	10:00 a. m.	4.66	.0152	.1893	9:20 a. m.	.071	.0002	.0019
8:00 a. m.	5.35	.0175	.5592	10:20 a. m.	3.80	.0124	.1939	9:40 a. m.	.076	.0002	.0019
8:15 a. m.	5.35	.0175	.5636	10:40 a. m.	2.97	.0097	.1976	10:00 a. m.	.082	.0003	.0020
8:20 a. m.	5.53	.0181	.5651	11:00 a. m.	2.41	.0079	.2005	10:20 a. m.	.088	.0003	.0021
8:30 a. m.	5.71	.0187	.5682	11:20 a. m.	2.05	.0067	.2029	10:40 a. m.	.095	.0003	.0022
8:40 a. m.	5.91	.0193	.5714	11:40 a. m.	1.77	.0058	.2050	11:00 a. m.	.095	.0003	.0023
9:00 a. m.	6.32	.0207	.5781	12:00 m.	1.54	.0050	.2068	11:20 a. m.	.095	.0003	.0024
9:20 a. m.	6.32	.0207	.5850	12:20 p. m.	1.40	.0046	.2084	11:40 a. m.	.095	.0003	.0025
9:40 a. m.	6.11	.0200	.5918	12:33 p. m.	1.33	.0044	.2094	12:00 m.	.095	.0003	.0026
10:00 a. m.	5.71	.0187	.5983	12:36 p. m.	1.62	.0053	.2096	12:20 p. m.	.102	.0003	.0027
11:00 a. m.	4.52	.0148	.6151	12:40 p. m.	2.41	.0079	.2100	12:35 p. m.	.102	.0003	.0028
12:00 m.	3.80	.0124	.6287	12:45 p. m.	4.38	.0143	.2109	12:40 p. m.	.128	.0004	.0028
1:00 p. m.	2.97	.0097	.6397	12:50 p. m.	2.97	.0097	.2119	12:45 p. m.	.158	.0005	.0029
2:00 p. m.	2.51	.0082	.6487	12:51 p. m.	8.42	.0276	.2122	1:00 p. m.	.196	.0006	.0030
3:00 p. m.	2.23	.0073	.6565	12:52 p. m.	18.9	.0618	.2129	1:15 p. m.	.210	.0007	.0032
4:00 p. m.	1.95	.0064	.6633	12:53 p. m.	28.9	.0945	.2142	1:20 p. m.	.196	.0006	.0032
5:00 p. m.	1.69	.0055	.6693	12:54 p. m.	28.0	.0916	.2158				
6:00 p. m.	1.54	.0050	.6745	1:00 p. m.	31.3	.102	.2255				
7:00 p. m.	1.47	.0048	.6794	1:05 p. m.	38.5	.126	.2354				
8:00 p. m.	1.54	.0050	.6843	1:10 p. m.	46.4	.152	.2465				
10:00 p. m.	1.40	.0046	.6939	1:13 p. m.	47.2	.154	.2541				
12:00 p. m.	1.26	.0041	.7027	1:20 p. m.	44.0	.144	.2720				

² Rain began.³ Rain ended.

TABLE 74.—Run-off from watershed 196 for selected storms, 1939—Continued

STORM OF OCTOBER 25-27, TOTAL RAINFALL 4.07 INCHES—Continued				STORM OF OCTOBER 25-27, TOTAL RAINFALL 4.07 INCHES—Continued				STORM OF OCTOBER 25-27, TOTAL RAINFALL 4.07 INCHES—Continued			
Date and time	Discharge	Accumulated run-off		Date and time	Discharge	Accumulated run-off		Date and time	Discharge	Accumulated run-off	
Oct. 25—Con.	Sec.-ft.	In. per hr.	In.	Oct. 26—Con.	Sec.-ft.	In. per hr.	In.	Oct. 27—Con.	Sec.-ft.	In. per hr.	In.
1:40 p. m.	0.182	0.0006	0.0034	7:00 a. m.	0.299	0.0010	0.0678	6:00 a. m.	12.2	0.0399	0.2077
2:00 p. m.	.170	.0006	.0036	7:20 a. m.	.280	.0009	.0681	6:10 a. m.	11.6	.0284	.2134
2:20 p. m.	.170	.0006	.0038	7:40 a. m.	.280	.0009	.0684	6:20 a. m.	6.52	.0213	.2175
2:30 p. m.	.196	.0006	.0039	8:00 a. m.	.261	.0009	.0687	6:30 a. m.	5.35	.0175	.2207
2:35 p. m.	.226	.0007	.0040	8:20 a. m.	.261	.0009	.0690	6:40 a. m.	4.24	.0139	.2233
2:40 p. m.	.261	.0009	.0040	8:40 a. m.	.261	.0009	.0693	6:50 a. m.	2.97	.0097	.2253
2:50 p. m.	.318	.0010	.0042	8:43 a. m.	.337	.0011	.0694	7:00 a. m.	2.41	.0079	.2268
3:00 p. m.	.360	.0012	.0044	8:46 a. m.	.452	.0015	.0697	7:20 a. m.	1.86	.0061	.2291
3:10 p. m.	.429	.0014	.0046	8:47 a. m.	.763	.0025	.0697	7:40 a. m.	1.47	.0048	.2309
3:18 p. m.	.429	.0014	.0048	8:48 a. m.	1.26	.0041	.0699	7:55 a. m.	1.40	.0046	.2321
3:19 p. m.	.661	.0022	.0048	8:49 a. m.	1.86	.0061	.0700	8:00 a. m.	1.40	.0046	.2325
3:20 p. m.	1.08	.0035	.0049	8:50 a. m.	2.61	.0085	.0701	8:05 a. m.	1.47	.0048	.2329
3:21 p. m.	1.40	.0046	.0050	8:55 a. m.	2.14	.0070	.0707	8:15 a. m.	1.47	.0048	.2337
3:22 p. m.	2.23	.0073	.0051	9:00 a. m.	1.54	.0050	.0712	8:20 a. m.	1.40	.0046	.2341
3:25 p. m.	2.72	.0089	.0055	9:01 a. m.	3.34	.0119	.0713	8:30 a. m.	1.40	.0046	.2349
3:28 p. m.	3.10	.0101	.0060	9:02 a. m.	4.80	.0157	.0716	8:40 a. m.	1.47	.0048	.2357
3:40 p. m.	2.51	.0082	.0078	9:04 a. m.	6.72	.0220	.0723	8:45 a. m.	1.86	.0061	.2361
3:50 p. m.	2.05	.0067	.0090	9:05 a. m.	8.67	.0284	.0723	8:50 a. m.	2.23	.0073	.2367
4:00 p. m.	1.69	.0055	.0100	9:07 a. m.	12.2	.0399	.0735	9:00 a. m.	2.41	.0079	.2380
4:20 p. m.	1.47	.0048	.0117	9:10 a. m.	15.1	.0494	.0757	9:05 a. m.	3.64	.0119	.2388
4:25 p. m.	1.62	.0053	.0121	9:15 a. m.	20.2	.0660	.0805	9:20 a. m.	3.34	.0109	.2416
4:40 p. m.	1.54	.0050	.0134	9:20 a. m.	22.1	.0723	.0863	9:30 a. m.	3.95	.0129	.2436
4:49 p. m.	1.54	.0050	.0142	9:25 a. m.	18.4	.0602	.0918	9:40 a. m.	5.16	.0169	.2460
4:50 p. m.	1.69	.0055	.0143	9:30 a. m.	15.1	.0494	.0964	9:47 a. m.	4.98	.0163	.2479
4:52 p. m.	2.23	.0072	.0145	9:35 a. m.	12.9	.0422	.1003	9:50 a. m.	5.53	.0181	.2488
4:54 p. m.	3.10	.0101	.0148	9:40 a. m.	10.3	.0337	.1034	9:52 a. m.	6.72	.0220	.2495
4:57 p. m.	4.38	.0143	.0154	9:50 a. m.	6.72	.0220	.1081	9:55 a. m.	8.42	.0276	.2507
5:00 p. m.	4.38	.0143	.0161	10:00 a. m.	4.98	.0163	.1113	10:00 a. m.	10.6	.0347	.2533
5:05 p. m.	4.52	.0148	.0173	10:10 a. m.	3.64	.0119	.1137	10:10 a. m.	13.3	.0435	.2598
5:20 p. m.	3.80	.0124	.0207	10:20 a. m.	3.10	.0101	.1155	10:20 a. m.	10.3	.0337	.2662
5:30 p. m.	3.80	.0124	.0228	10:40 a. m.	2.32	.0076	.1184	10:30 a. m.	7.66	.0251	.2711
5:40 p. m.	3.22	.0105	.0247	11:00 a. m.	1.77	.0058	.1206	10:40 a. m.	6.32	.0207	.2749
5:55 p. m.	2.51	.0082	.0270	11:20 a. m.	1.40	.0046	.1223	10:50 a. m.	5.16	.0169	.2780
6:00 p. m.	2.41	.0079	.0277	11:40 a. m.	1.14	.0037	.1237	11:00 a. m.	4.24	.0139	.2806
6:20 p. m.	2.41	.0079	.0303	12:00 m.	.831	.0027	.1248	11:20 a. m.	2.72	.0089	.2844
6:27 p. m.	2.32	.0076	.0312	12:20 p. m.	.797	.0026	.1257	11:40 a. m.	2.14	.0070	.2870
6:35 p. m.	2.51	.0082	.0323	12:40 p. m.	.695	.0023	.1265	12:00 m.	1.69	.0055	.2912
6:40 p. m.	2.97	.0097	.0330	1:00 p. m.	.593	.0019	.1272	12:20 p. m.	1.47	.0048	.2929
6:45 p. m.	3.64	.0119	.0339	1:20 p. m.	.503	.0016	.1278	12:40 p. m.	1.26	.0041	.2944
6:50 p. m.	3.64	.0119	.0349	1:40 p. m.	.452	.0015	.1283	1:00 p. m.	1.08	.0035	.2945
7:00 p. m.	3.22	.0105	.0368	2:00 p. m.	.406	.0013	.1288	1:20 p. m.	.970	.0032	.2956
7:15 p. m.	3.34	.0109	.0395	2:30 p. m.	.337	.0011	.1294	1:40 p. m.	.872	.0029	.2966
7:20 p. m.	3.22	.0105	.0404	3:00 p. m.	.280	.0009	.1299	1:45 p. m.	.970	.0032	.2969
7:30 p. m.	2.51	.0082	.0420	3:30 p. m.	.242	.0008	.1303	1:50 p. m.	1.14	.0037	.2972
7:40 p. m.	2.05	.0067	.0432	4:00 p. m.	.210	.0007	.1307	2:00 p. m.	1.08	.0035	.2978
8:00 p. m.	1.47	.0048	.0451	4:30 p. m.	.196	.0006	.1310	2:15 p. m.	1.02	.0033	.2987
8:20 p. m.	1.14	.0037	.0465	5:00 p. m.	.182	.0006	.1313	2:18 p. m.	1.47	.0048	.2989
8:40 p. m.	.921	.0030	.0476	6:00 p. m.	.148	.0004	.1318	2:20 p. m.	1.95	.0064	.2991
9:00 p. m.	.797	.0026	.0485	7:30 p. m.	.128	.0004	.1325	2:22 p. m.	2.51	.0082	.2994
9:20 p. m.	.729	.0024	.0493	9:30 p. m.	.110	.0003	.1333	2:25 p. m.	3.10	.0101	.3003
9:40 p. m.	.627	.0021	.0500	11:30 p. m.	.095	.0003	.1340	2:30 p. m.	2.84	.0093	.3011
10:00 p. m.	.559	.0018	.0506	12:00 p. m.	.088	.0003	.1342	2:40 p. m.	2.84	.0093	.3026
10:20 p. m.	.503	.0016	.0512	Oct. 27:				2:45 p. m.	2.61	.0085	.3034
10:40 p. m.	.475	.0016	.0517	1:30 a. m.	.088	.0003	.1346	2:50 p. m.	2.84	.0093	.3042
10:50 p. m.	.627	.0021	.0520	2:30 a. m.	.082	.0003	.1349	3:00 p. m.	2.41	.0079	.3056
10:55 p. m.	.797	.0026	.0522	3:50 a. m.	.076	.0002	.1352	3:10 p. m.	2.05	.0067	.3068
11:00 p. m.	.797	.0026	.0524	4:00 a. m.	.076	.0002		3:20 p. m.	2.23	.0073	.3080
11:20 p. m.	.797	.0023	.0532	4:05 a. m.	.095	.0003		3:40 p. m.	1.77	.0058	.3102
11:30 p. m.	.797	.0023	.0537	4:10 a. m.	.128	.0004	.1353	4:00 p. m.	1.47	.0048	.3120
11:33 p. m.	.921	.0030	.0538	4:12 a. m.	.170	.0006		4:20 p. m.	1.14	.0037	.3134
11:35 p. m.	1.26	.0041	.0539	4:14 a. m.	.226	.0007		4:30 p. m.	1.02	.0033	.3140
11:38 p. m.	1.86	.0061	.0542	4:15 a. m.	.299	.0010		4:40 p. m.	1.08	.0035	.3146
11:40 p. m.	2.05	.0070	.0544	4:17 a. m.	.360	.0012		5:00 p. m.	.970	.0032	.3157
12:00 p. m.	1.62	.0053	.0564	4:20 a. m.	.429	.0014	.1354	5:20 p. m.	.872	.0029	.3167
Oct. 26:				4:40 a. m.	.406	.0013	.1359	5:40 p. m.	.797	.0026	.3176
12:20 a. m.	1.14	.0037	.0579	4:45 a. m.	.429	.0014	.1360	6:00 p. m.	.763	.0025	.3184
12:40 a. m.	.872	.0029	.0590	4:48 a. m.	.503	.0016	.1360	6:20 p. m.	.729	.0024	.3192
1:00 a. m.	.729	.0024	.0599	4:49 a. m.	.695	.0023	.1361	6:40 p. m.	.695	.0023	.3200
1:20 a. m.	.627	.0021	.0606	4:50 a. m.	.921	.0030	.1361	7:00 p. m.	.695	.0023	.3208
1:40 a. m.	.531	.0017	.0612	4:51 a. m.	1.33	.0044	.1362	7:20 p. m.	.661	.0022	.3215
2:00 a. m.	.503	.0016	.0618	4:53 a. m.	1.86	.0061	.1364	7:40 p. m.	.593	.0019	.3222
2:20 a. m.	.475	.0016	.0623	4:54 a. m.	2.61	.0085	.1365	8:00 p. m.	.531	.0017	.3228
2:40 a. m.	.452	.0015	.0628	4:58 a. m.	3.64	.0119	.1372	8:30 p. m.	.503	.0016	.3236
3:00 a. m.	.429	.0014	.0633	5:00 a. m.	3.95	.0129	.1376	9:20 p. m.	.452	.0015	.3249
3:20 a. m.	.406	.0013	.0637	5:05 a. m.	5.35	.0175	.1389	10:00 p. m.	.406	.0013	.3258
3:40 a. m.	.383	.0013	.0641	5:06 a. m.	7.43	.0243	.1392	11:00 p. m.	.360	.0012	.3270
4:00 a. m.	.383	.0013	.0645	5:07 a. m.	10.0	.0327	.1397	12:00 p. m.	.318	.0010	.3281
4:10 a. m.	.383	.0013	.0647	5:08 a. m.	20.2	.0660	.1405	Oct. 28:			
4:20 a. m.	.406	.0013	.0649	5:10 a. m.	23.3	.0762	.1429	1:00 a. m.	.280	.0010	.3290
4:30 a. m.	.406	.0013	.0651	5:15 a. m.	26.9	.0880	.1497	2:10 a. m.	.242	.0008	.3300
4:40 a. m.	.406	.0013	.0653	5:20 a. m.	32.3	.1056	.1578	3:30 a. m.	.210	.0007	.3310
5:00 a. m.	.383	.0013	.0657	5:22 a. m.	32.6	.1066	.1613	5:00 a. m.	.182	.0006	.3320
5:20 a. m.	.360	.0012	.0661	5:30 a. m.	28.9	.0945	.1747	6:10 a. m.	.170	.0006	.3327
5:40 a. m.	.337	.0011	.0665	5:35 a. m.	25.8	.0844	.1822	7:00 a. m.	.158	.0005	.3331
6:00 a. m.	.318	.0010	.0669	5:40 a. m.	23.0	.0752	.1889	8:30 a. m.	.158	.0005	.3339
6:20 a. m.	.299	.0009	.0672	5:45 a. m.	20.2	.0660	.1948	9:00 a. m.	.138	.0005	.3342
6:40 a. m.	.299	.0010	.0675	5:50 a. m.	16.7	.0546	.1998	4:30 p. m.	.110	.0004	.3342

¹ Rain began.² Rain ended.³ Discharges between 10:10 and 5:00 p. m. estimated.

TABLE 75.—Run-off from watershed 102 for selected storms, 1939

[Area 1.25 acres; rainfall measured at recording rain gage Y101]

Date and time			Discharge ¹			Accumulated run-off																																
STORM OF JULY 8, TOTAL RAINFALL 2.62 INCHES						STORM OF JULY 8, TOTAL RAINFALL 2.62 INCHES—Continued						STORM OF OCT. 25-27, TOTAL RAINFALL, 4.18 INCHES—Continued																										
July 8:			Sec.-ft.			In. per hr.			In.			July 8—Con.			Sec.-ft.			In. per hr.			In.			Oct. 25—Con.			Sec.-ft.			In. per hr.			In.					
5:00 a. m. ² -----			0			0			0			12:54 p. m.-----			0.160			0.127			0.0534			Oct. 25—Con.			11:00 p. m.-----			0.004			0.0032			0.0030		
5:10 a. m.-----			0			0			0			12:55 p. m.-----			.170			.1350			.0557			11:10 p. m.-----			0			0			.0031					
5:15 a. m.-----			T			T			0			12:58 p. m.-----			.202			.160			.0634			Oct. 26:			8:37 a. m.-----			0			0			.0031		
5:17 a. m.-----			.019			.0151			.0006			12:59 p. m.-----			.350			.278			.0671			8:38 a. m.-----			.030			.0238			.0033					
5:19 a. m.-----			.0105			.0079			.0009			1:00 p. m.-----			.46			.365			.0727			8:39 a. m.-----			.086			.0683			.0041					
5:20 a. m.-----			.019			.0151			.0012			1:02 p. m.-----			.54			.429			.0865			8:40 a. m.-----			.159			.126			.0057					
5:25 a. m.-----			.0105			.0079			.0022			1:05 p. m.-----			.51			.405			.1083			8:41 a. m.-----			.246			.195			.0084					
5:30 a. m.-----			0			0			.0026			1:08 p. m.-----			.43			.341			.1278			8:42 a. m.-----			.345			.274			.0123					
7:46 a. m.-----			0			0			.0026			1:10 p. m.-----			.350			.278			.1386			8:43 a. m.-----			.46			.365			.0176					
7:47 a. m.-----			.0105			.0079			.0027			1:13 p. m.-----			.270			.218			.1514			8:44 a. m.-----			.54			.429			.0242					
7:49 a. m.-----			.019			.0151			.0031			1:15 p. m.-----			.225			.178			.1582			8:45 a. m.-----			.51			.405			.0311					
7:50 a. m.-----			.056			.0444			.0036			1:17 p. m.-----			.170			.135			.1636			8:50 a. m.-----			.223			.177			.0553					
7:51 a. m.-----			.087			.0691			.0046			1:20 p. m.-----			.122			.0970			.1697			8:55 a. m.-----			.086			.0683			.0655					
7:52 a. m.-----			.122			.0970			.0060			1:22 p. m.-----			.087			.0691			.1726			9:00 a. m.-----			.019			.0151			.0690					
7:55 a. m.-----			.170			.135			.0121			1:25 p. m.-----			.056			.0444			.1756			9:05 a. m.-----			.010			.0079			.0700					
8:00 a. m.-----			.170			.135			.0238			1:27 p. m.-----			.042			.0334			.1769			9:10 a. m.-----			.004			.0032			.0705					
8:02 a. m.-----			.170			.135			.0285			1:30 p. m.-----			.030			.0238			.1784			9:13 a. m.-----			0			0			.0706					
8:05 a. m.-----			.160			.127			.0353			1:32 p. m.-----			.019			.0151			.1791			4:52 p. m.-----			0			0			.0706					
8:07 a. m.-----			.122			.0970			.0392			1:35 p. m.-----			.0105			.0079			.1797			4:55 p. m.-----			.010			.0079			.0708					
8:09 a. m.-----			.087			.0691			.0421			1:40 p. m.-----			.0105			.0079			.1804			5:00 p. m.-----			.055			.0437			.0730					
8:10 a. m.-----			.071			.0564			.0432			1:45 p. m.-----			T			T			.1808			5:05 p. m.-----			.070			.0556			.0771					
8:13 a. m.-----			.056			.0444			.0458			1:50 p. m.-----			T			T						5:07 p. m.-----			.086			.0683			.0792					
8:14 a. m.-----			.042			.0336			.0465			1:55 p. m.-----			0			0						5:10 p. m.-----			.055			.0437			.0820					
8:15 a. m.-----			.030			.0238			.0470			3:20 p. m. ³ -----			0			0			.1808			5:15 p. m.-----			.030			.0238			.0848					
8:18 a. m.-----			.019			.0151			.0480			STORM OF OCT. 25-27, TOTAL RAINFALL, 4.18 INCHES												5:20 p. m.-----			.010			.0079			.0861					
8:20 a. m.-----			.0105			.0079			.0484															5:25 p. m.-----			.004			.0032			.0866					
8:25 a. m.-----			.0105			.0079			.0491															5:30 p. m.-----			.004			.0032			.0869					
8:30 a. m.-----			T			T			.0495															5:33 p. m.-----			0			0			.0870					
8:35 a. m.-----			0			0																																
12:35 p. m.-----			0			0																																
12:40 p. m.-----			T			T																																
12:42 p. m.-----			.0105			.0079			.0496																													
12:45 p. m.-----			T			T			.0498																													
12:47 p. m.-----			T			T			.0498																													
12:48 p. m.-----			.0105			.0079			.0499																													
12:49 p. m.-----			.0105			.0079			.0500																													
12:50 p. m.-----			.019			.0151			.0502																													
12:52 p. m.-----			.030			.0238			.0509																													
12:53 p. m.-----			.087			.0691			.0517																													

¹ Observed flow without corrections for base flow.² Rain began.³ Rain ended.

TABLE 76.—Run-off from watershed 103 for selected storms, 1939

[Area 0.65 acres; rainfall measured at recording rain gage 107]

Date and time		Discharge ¹		Accumulated run-off	Date and time		Discharge ¹		Accumulated run-off	Date and time		Discharge ¹		Accumulated run-off
STORM OF JUNE 18-19, TOTAL RAINFALL 3.20 INCHES					STORM OF JUNE 18-19, TOTAL RAINFALL 3.20 INCHES—Continued					STORM OF JUNE 18-19, TOTAL RAINFALL 3.20 INCHES—Continued				
June 18:		Sec.-ft.	In. per hr.	In.	June 18—Con.		Sec.-ft.	In. per hr.	In.	June 18—Con.		Sec.-ft.	In. per hr.	In.
8:00 a. m.-----		0	0	0	10:15 a. m.-----		0.0130	0.0198	0.0472	12:00 m.-----		0.0567	0.0865	0.3783
8:05 a. m.-----		.0014	.0021	.0001	10:20 a. m.-----		.0130	.0198	.0505	12:05 p. m.-----		.0447	.0682	.3847
8:15 a. m.-----		.0031	.0047	.0007	10:23 a. m.-----		.0166	.0253	.0516	12:15 p. m.-----		.0392	.0598	.3954
8:20 a. m.-----		.0031	.0047	.0011	10:25 a. m.-----		.0293	.0447	.0528	12:16 p. m.-----		.0701	.107	.3968
8:39 a. m.-----		.0031	.0047	.0026	10:30 a. m.-----		.0505	.0770	.0579	12:17 p. m.-----		.120	.182	.3992
8:40 a. m.-----		.0050	.0076	.0027	10:35 a. m.-----		.0392	.0598	.0636	12:18 p. m.-----		.183	.279	.4030
8:43 a. m.-----		.0130	.0198	.0034	10:40 a. m.-----		.0243	.0378	.0677	12:20 p. m.-----		.234	.357	.4136
8:45 a. m.-----		.0100	.0152	.0040	10:45 a. m.-----		.0205	.0313	.0706	12:25 p. m.-----		.207	.316	.4416
8:48 a. m.-----		.0050	.0076	.0046	10:48 a. m.-----		.0166	.0253	.0720	12:27 p. m.-----		.1602	.244	.4509
8:50 a. m.-----		.0100	.0152	.0050	10:50 a. m.-----		.0248	.0378	.0731	12:28 p. m.-----		.129	.197	.4546
8:53 a. m.-----		.0248	.0378	.0063	10:53 a. m.-----		.0567	.0865	.0762	12:30 p. m.-----		.085	.130	.4600
8:55 a. m.-----		.0248	.0378	.0076	10:55 a. m.-----		.0701	.107	.0794	12:31 p. m.-----		.0774	.118	.4621
9:00 a. m.-----		.0130	.0198	.0100	10:58 a. m.-----		.0774	.118	.0850	12:33 p. m.-----		.0701	.107	.4659
9:01 a. m.-----		.0130	.0198	.0103	11:00 a. m.-----		.0850	.130	.0891	12:35 p. m.-----		.0632	.0964	.4693
9:03 a. m.-----		.0293	.0447	.0114	11:03 a. m.-----		.139	.212	.0976	12:40 p. m.-----		.0632	.0964	.4773
9:05 a. m.-----		.0447	.0682	.0133	11:05 a. m.-----		.171	.262	.1055	12:45 p. m.-----		.0505	.0770	.4845
9:07 a. m.-----		.0505	.0770	.0157	11:08 a. m.-----		.276	.421	.1226	12:50 p. m.-----		.0447	.0682	.4905
9:08 a. m.-----		.0567	.0865	.0171	11:10 a. m.-----		.374	.571	.1391	12:53 p. m.-----		.0392	.0598	.4937
9:10 a. m.-----		.0248	.0378	.0192	11:12 a. m.-----		.392	.598	.1586	12:58 p. m.-----		.0293	.0447	.4981
9:12 a. m.-----		.0166	.0253	.0203	11:13 a. m.-----		.374	.571	.1683	1:00 p. m.-----		.0248	.0378	.4995
9:13 a. m.-----		.0130	.0198	.0207	11:15 a. m.-----		.307	.468	.1856	1:05 p. m.-----		.0166	.0253	.5021
9:15 a. m.-----		.0100	.0152	.0213	11:18 a. m.-----		.234	.357	.2062	1:10 p. m.-----		.0100	.0152	.5038
9:20 a. m.-----		.0073	.0111	.0224	11:23 a. m.-----		.195	.298	.2325	1:20 p. m.-----		.0073	.0111	.5060
9:30 a. m.-----		.0100	.0152	.0246	11:25 a. m.-----		.220	.336	.2441	1:30 p. m.-----		.0073	.0111	.5078
9:32 a. m.-----		.0100	.0152	.0251	11:30 a. m.-----		.307	.468	.2776	1:40 p. m.-----		.0073	.0111	.5096
9:35 a. m.-----		.0166	.0253	.0261	11:33 a. m.-----		.207	.316	.2972	2:00 p. m.-----		.0073	.0111	.5133
9:40 a. m.-----		.0248	.0378	.0287	11:35 a. m.-----		.183	.279	.3071	2:20 p. m.-----		.0050	.0076	.5165
9:45 a. m.-----		.0293	.0447	.0321	11:38 a. m.-----		.183	.279	.3211	2:35 p. m.-----		.0050	.0076	.5184
9:50 a. m.-----		.0248	.0378	.0355	11:45 a. m.-----		.139	.212	.3498	2:40 p. m.-----		.0073	.0111	.5192
9:55 a. m.-----		.0205	.0313	.0384	11:48 a. m.-----		.0850	.130	.3583	2:45 p. m.-----		.0073	.0111	.5201
10:00 a. m.-----		.0205	.0313	.0410	11:50 a. m.-----		.0701	.107	.3622	3:00 p. m.-----		.0073	.0111	.5229
10:05 a. m.-----		.0166	.0253	.0434	11:55 a. m.-----		.0632	.0964	.3707	4:00 p. m.-----		.0050	.0076	.5323

¹ Observed flow without corrections for base flow.

TABLE 76.—Run-off from watershed 103 for selected storms, 1939—Continued

Date and time	Discharge	Accumulated run-off	Date and time	Discharge	Accumulated run-off	Date and time	Discharge	Accumulated run-off
STORM OF JUNE 18-19, TOTAL RAINFALL 3.20 INCHES—Continued			STORM OF JUNE 18-19, TOTAL RAINFALL 3.20 INCHES—Continued			STORM OF JULY 8, TOTAL RAINFALL 2.67 INCHES—Continued		
June 18—Con.	Sec.-ft.	In. per hr.	June 19—Con.	Sec.-ft.	In. per hr.	July 8—Con.	Sec.-ft.	In. per hr.
4:40 p. m.	0.0040	0.0062	3:10 a. m.	0.0505	0.0770	8:02 a. m.	1.30	1.98
4:45 p. m.	0.0040	0.0062	3:15 a. m.	0.0701	0.107	8:03 a. m.	1.53	2.33
4:55 p. m.	0.0050	0.0076	3:20 a. m.	0.0850	0.130	8:04 a. m.	1.30	1.98
5:00 p. m.	0.0050	0.0076	3:30 a. m.	0.102	0.155	8:05 a. m.	1.10	1.68
5:40 p. m.	0.0050	0.0076	3:35 a. m.	0.0632	0.0964	8:06 a. m.	0.911	1.39
6:00 p. m.	0.0050	0.0076	3:38 a. m.	0.0447	0.0682	8:07 a. m.	0.771	1.18
6:38 p. m.	0.0050	0.0076	3:45 a. m.	0.0447	0.0682	8:08 a. m.	0.644	0.983
6:43 p. m.	0.0073	0.0111	3:53 a. m.	0.0341	0.0520	8:09 a. m.	0.530	0.809
6:45 p. m.	0.0166	0.0253	4:00 a. m.	0.0447	0.0682	8:10 a. m.	0.429	0.654
6:47 p. m.	0.0248	0.0378	4:05 a. m.	0.0392	0.0598	8:12 a. m.	0.291	0.444
6:48 p. m.	0.0567	0.0865	4:10 a. m.	0.0205	0.0313	8:15 a. m.	0.291	0.444
6:50 p. m.	0.0701	0.107	4:20 a. m.	0.0166	0.0253	8:16 a. m.	0.530	0.809
6:55 p. m.	0.120	0.182	4:30 a. m.	0.0166	0.0253	8:18 a. m.	0.644	0.983
7:00 p. m.	0.0701	0.107	5:00 a. m.	0.0166	0.0253	8:20 a. m.	0.509	0.777
7:03 p. m.	0.0930	0.142	5:20 a. m.	0.0148	0.0226	8:21 a. m.	0.410	0.626
7:05 p. m.	0.0701	0.107	5:40 a. m.	0.0148	0.0226	8:22 a. m.	0.323	0.493
7:07 p. m.	0.0505	0.0770	6:00 a. m.	0.0148	0.0226	8:23 a. m.	0.262	0.400
7:10 p. m.	0.0392	0.0598	6:20 a. m.	0.0148	0.0226	8:24 a. m.	0.207	0.316
7:15 p. m.	0.0505	0.0770	6:40 a. m.	0.0148	0.0226	8:25 a. m.	0.160	0.244
7:20 p. m.	0.0248	0.0378	7:00 a. m.	0.0148	0.0226	8:30 a. m.	0.110	0.168
7:25 p. m.	0.0205	0.0313	7:20 a. m.	0.0148	0.0226	8:40 a. m.	0.0774	0.118
7:26 p. m.	0.0166	0.0253	7:30 a. m.	0.0148	0.0226	9:00 a. m.	0.0567	0.0865
7:28 p. m.	0.0205	0.0313	7:35 a. m.	0.0166	0.0253	9:20 a. m.	0.0447	0.0682
7:30 p. m.	0.0392	0.0598	7:45 a. m.	0.0293	0.0447	9:40 a. m.	0.0341	0.0520
7:33 p. m.	0.0447	0.0682	7:50 a. m.	0.0248	0.0378	10:00 a. m.	0.0293	0.0447
7:35 p. m.	0.0293	0.0447	8:00 a. m.	0.0205	0.0313	10:20 a. m.	0.0205	0.0313
7:40 p. m.	0.0205	0.0313	8:20 a. m.	0.0166	0.0253	10:30 a. m.	0.0166	0.0253
7:45 p. m.	0.0166	0.0253	8:40 a. m.	0.0166	0.0253	11:00 a. m.	0.0100	0.0152
7:55 p. m.	0.0130	0.0198	9:00 a. m.	0.0166	0.0253	11:30 a. m.	0.0050	0.0076
8:00 p. m.	0.0166	0.0253	9:20 a. m.	0.0166	0.0253	12:00 m.	0.0014	0.0021
8:10 p. m.	0.0148	0.0226	9:40 a. m.	0.0148	0.0226	12:30 p. m.	0	0
8:30 p. m.	0.0130	0.0198	10:00 a. m.	0.0148	0.0226	12:39 p. m.	1.27	1.94
9:00 p. m.	0.0115	0.0175	11:00 a. m.	0.0100	0.0152	12:40 p. m.	0.552	0.842
9:30 p. m.	0.0100	0.0152	12:00 m.	0.0050	0.0076	12:41 p. m.	0.429	0.654
9:34 p. m.	0.0100	0.0152	1:00 p. m.	0.0014	0.0021	12:42 p. m.	0.323	0.493
9:35 p. m.	0.0130	0.0198	2:00 p. m.	0	0	12:43 p. m.	0.234	0.357

³ Rain ended.

⁴ Seventeen showers of short duration occurred between 12:00 m. on Oct. 25 to 8:37 a. m. on Oct. 26. Major storm began at 8:45 a. m.

TABLE 76.—Run-off from watershed 103 for selected storms, 1939—Continued

Date and time		Discharge		Accumulated run-off	Date and time		Discharge		Accumulated run-off	Date and time		Discharge		Accumulated run-off
STORM OF OCT. 25-27, TOTAL RAINFALL 3.92 INCHES—Continued					STORM OF OCT. 25-27, TOTAL RAINFALL 3.92 INCHES—Continued					STORM OF OCT. 25-27, TOTAL RAINFALL 3.92 INCHES—Continued				
Oct. 26—Con.		Sec.-ft.	In. per hr.	In.	Oct. 27—Con.		Sec.-ft.	In. per hr.	In.	Oct. 27—Con.		Sec.-ft.	In. per hr.	In.
8:55 a. m.-----		0.693	1.06	0.2081	4:46 a. m.-----		0.102	0.155	0.5370	11:00 a. m.-----		0.0166	0.0253	1.3625
9:00 a. m.-----		.530	.809	.2855	4:50 a. m.-----		.149	.228	.5497	12:00 m.-----		.0073	.0111	1.3807
9:05 a. m.-----		.356	.543	.3416	4:55 a. m.-----		.195	.298	.5716	1:00 p. m.-----		.0031	.0047	1.3886
9:10 a. m.-----		.248	.378	.3798	5:00 a. m.-----		.234	.357	.5989	1:30 p. m.-----		.0014	.0021	1.3903
9:15 a. m.-----		.171	.262	.4064	5:05 a. m.-----		.276	.421	.6313	1:35 p. m.-----		.0014	.0021	1.3905
9:20 a. m.-----		.129	.197	.4255	5:09 a. m.-----		.307	.468	.6609	1:38 p. m.-----		.0014	.0021	1.3906
9:25 a. m.-----		.0930	.142	.4396	5:10 a. m.-----		.307	.468	.6687	1:39 p. m.-----		.0031	.0047	1.3906
9:30 a. m.-----		.0701	.107	.4499	5:11 a. m.-----		.248	.378	.6757	1:40 p. m.-----		.0166	.0253	1.3908
9:36 a. m.-----		.0505	.0770	.4591	5:15 a. m.-----		.234	.357	.7002	1:41 p. m.-----		.207	.316	1.3936
9:41 a. m.-----		.0392	.0598	.4648	5:20 a. m.-----		.207	.316	.7282	1:42 p. m.-----		.374	.571	1.4010
9:50 a. m.-----		.0248	.0378	.4721	5:30 a. m.-----		.171	.262	.7763	1:44 p. m.-----		.262	.400	1.4171
10:00 a. m.-----		.0130	.0198	.4769	5:40 a. m.-----		.139	.212	.8158	1:45 p. m.-----		.171	.262	1.4226
10:15 a. m.-----		.0050	.0076	.4803	5:50 a. m.-----		.120	.182	.8487	1:47 p. m.-----		.0930	.142	1.4293
10:27 a. m.-----		.0014	.0021	.4825	6:00 a. m.-----		.102	.155	.8768	1:49 p. m.-----		.0567	.086	1.4331
11:00 a. m.-----		0	0	.4831	6:30 a. m.-----		.0774	.118	.9450	1:50 p. m.-----		.120	.182	1.4353
11:40 a. m. ³ -----		0	0	.4831	7:00 a. m.-----		.0632	.0964	.9986	1:51 p. m.-----		.0341	.0520	1.4372
Oct. 27:					8:00 a. m.-----		.0632	.0964	1.0950	1:53 p. m.-----		.0293	.0447	1.4388
3:55 a. m. ² -----		0	0	.4831	8:30 a. m.-----		.0701	.107	1.1458	1:55 p. m.-----		.0205	.0313	1.4401
4:00 a. m.-----		.0014	.0021	.4832	9:00 a. m.-----		.0701	.107	1.1993	2:00 p. m.-----		.0100	.0152	1.4419
4:05 a. m.-----		.0100	.0152	.4833	9:20 a. m.-----		.0632	.0964	1.2332	2:30 p. m.-----		.0050	.0076	1.4476
4:06 a. m.-----		.0505	.0770	.4841	9:25 a. m.-----		.0632	.0964	1.2412	3:00 p. m.-----		.0014	.0021	1.4500
4:07 a. m.-----		.0701	.107	.4856	9:29 a. m.-----		.0632	.0964	1.2476	3:20 p. m.-----		.0014	.0021	1.4507
4:08 a. m.-----		.102	.155	.4878	9:30 a. m.-----		.120	.182	1.2499	3:25 p. m.-----		.0014	.0021	1.4509
4:09 a. m.-----		.0930	.142	.4903	9:31 a. m.-----		.149	.228	1.2533	3:30 p. m.-----		.0031	.0047	1.4512
4:10 a. m.-----		.0701	.108	.5007	9:35 a. m.-----		.171	.262	1.2697	3:40 p. m.-----		.0050	.0076	1.4517
4:15 a. m.-----		.0632	.0964	.5092	9:40 a. m.-----		.183	.279	1.2922	4:00 p. m.-----		.0031	.0047	1.4537
4:20 a. m.-----		.0505	.0770	.5164	9:43 a. m.-----		.120	.182	1.3037	6:00 p. m.-----		.0014	.0021	1.4605
4:25 a. m.-----		.0341	.0520	.5218	9:45 a. m.-----		.0850	.130	1.3089	8:00 p. m. ³ -----		.0014	.0021	1.4647
4:30 a. m.-----		.0293	.0447	.5258	9:50 a. m.-----		.0447	.0682	1.3171	9:00 p. m.-----		.0014	.0021	1.4668
4:35 a. m.-----		.0293	.0447	.5294	9:55 a. m.-----		.0341	.0520	1.3221	12:00 p. m.-----		T	T	1.4698
4:40 a. m.-----		.0447	.0682	.5333	10:00 a. m.-----		.0293	.0447	1.3261	Oct. 28:				
4:44 a. m.-----		.0701	.107	.5348	10:30 a. m.-----		.0248	.0378	1.3467	3:00 a. m.-----		0	0	1.4698

² Rain began.³ Rain ended.

TABLE 77.—Run-off from watershed 104 for selected storms, 1939

[Area 1.33 acres; rainfall measured at recording rain gage Y101]

Date and time		Drainage ¹		Accumulated run-off	Date and time		Drainage ¹		Accumulated run-off	Date and time		Drainage ¹		Accumulated run-off
STORM OF JULY 8, TOTAL RAINFALL, 2.62 INCHES					STORM OF JULY 8, TOTAL RAINFALL, 2.62 INCHES—Continued					STORM OF OCTOBER 25-27, TOTAL RAINFALL 4.13 INCHES—Continued				
July 8:		Sec.-ft.	In. per hr.	In.	July 8—Con.		Sec.-ft.	In. per hr.	In.	Oct. 26—Con.		Sec.-ft.	In. per hr.	In.
5:05 a. m. ²	0	0	0	0	12:57 p. m.	0.071	0.0538	0.0717	0	8:47 a. m.	0.71	0.538	0.0282	
5:12 a. m.	0	0	0	0	1:00 p. m.	.071	.0538	.0744	0	8:48 a. m.	.77	.584	.0375	
5:13 a. m.	.0105	.0080	0	0	1:01 p. m.	.202	.153	.0761	0	8:50 a. m.	.64	.485	.0553	
5:14 a. m.	.015	.0080	0	0	1:02 p. m.	.321	.244	.0794	0	8:51 a. m.	.54	.409	.0628	
5:15 a. m.	.030	.0227	.0003	.0003	1:05 p. m.	.270	.205	.0906	0	8:52 a. m.	.46	.349	.0691	
5:20 a. m.	.019	.0144	.0019	.0019	1:08 p. m.	.202	.153	.0996	0	8:53 a. m.	.345	.262	.0750	
5:22 a. m.	.019	.0144	.0024	.0024	1:10 p. m.	.160	.121	.1042	0	8:54 a. m.	.294	.223	.0790	
5:25 a. m.	.015	.0114	.0030	.0030	1:13 p. m.	.104	.0789	.1092	0	8:55 a. m.	.223	.169	.0823	
5:30 a. m.	.0105	.0080	.0038	.0038	1:15 p. m.	.071	.0538	.1114	0	8:56 a. m.	.179	.136	.0848	
5:40 a. m.	.0105	.0080	.0051	.0051	1:18 p. m.	.042	.0319	.1135	0	8:57 a. m.	.139	.105	.0868	
6:00 a. m.	.0105	.0080	.0078	.0078	1:20 p. m.	.030	.0227	.1144	0	8:58 a. m.	.104	.0788	.0883	
6:20 a. m.	.015	.0114	.0110	.0110	1:25 p. m.	.0105	.0080	.1157	0	9:00 a. m.	.071	.0538	.0905	
6:40 a. m.	.015	.0114	.0148	.0148	1:30 p. m.	.0053	.0040	.1162	0	9:03 a. m.	.042	.0318	.0926	
7:00 a. m.	.015	.0114	.0186	.0186	1:40 p. m.	T	T	.1165	0	9:05 a. m. ³	.030	.0227	.0935	
7:20 a. m.	.015	.0114	.0224	.0224	1:50 p. m.	T	T		0	9:10 a. m. ⁴	.030	.0227	.0954	
7:34 a. m.	.015	.0114	.0251	.0251	2:00 p. m.	T	T		0	9:20 a. m.	.025	.0189	.0989	
7:50 a. m.	.019	.0144	.0285	.0285	2:20 p. m.	T	T		0	9:30 a. m.	.019	.0144	.1045	
7:52 a. m.	.025	.0190	.0291	.0291	2:40 p. m.	T	T		0	9:40 a. m.	.015	.0114	.1066	
7:55 a. m.	.056	.0425	.0306	.0306	3:00 p. m.	0	0		0	9:50 a. m.	.0105	.0080	.1082	
7:57 a. m.	.071	.0538	.0322	.0322	12:00 p. m. ³	0	0	.1165	0	10:00 a. m.	.0105	.0080	.1095	
8:00 a. m.	.071	.0538	.0349	.0349						0	10:10 a. m.	T	T	.1102
8:02 a. m.	.087	.0660	.0369	.0369						0	10:20 a. m.	T	T	
8:05 a. m.	.165	.125	.0417	.0417						0	10:30 a. m.	0	0	
8:10 a. m.	.122	.0925	.0508	.0508						Oct. 27:				
8:12 a. m.	.087	.0660	.0534	.0534						4:07 a. m. ²				
8:15 a. m.	.056	.0425	.0561	.0561						4:45 a. m.				
8:17 a. m.	.042	.0319	.0573	.0573						4:50 a. m.				
8:20 a. m.	.030	.0227	.0587	.0587						4:55 a. m.				
8:25 a. m.	.030	.0227	.0606	.0606						4:57 a. m.				
8:30 a. m.	.025	.0190	.0623	.0623						5:00 a. m.				
8:40 a. m.	.019	.0144	.0651	.0651						5:06 a. m.				
8:50 a. m.	.015	.0114	.0673	.0673						5:08 a. m.				
9:00 a. m.	.0105	.0080	.0689	.0689						5:12 a. m.				
9:10 a. m.	.0053	.0040	.0699	.0699						5:15 a. m.				
9:20 a. m.	T	T	.0702	.0702						5:18 a. m.				
9:40 a. m.	0	0	.0702	.0702						5:20 a. m.				
12:53 p. m.	0	0	.0702	.0702						5:30 a. m. ³				
12:55 p. m.	.019	.0144	.0704	.0704						5:35 a. m.				
12:56 p. m.	.056	.0425	.0709	.0709										

¹ Observed flow without corrections for base flow.² Rain began.³ Rain ended.⁴ Record between 9:00 a. m. and 10:20 a. m. estimated.

[Area 1.56 acres: rainfall measured at recording rain gage 113]

³ Rain ended.

TABLE 79.—Run-off from watershed 107 for selected storms, 1939

[Area 2.59 acres; rainfall measured at recording rain gage 113]

STORM OF FEBRUARY 14-15, TOTAL RAINFALL 1.35 INCHES				STORM OF JUNE 18-19, TOTAL RAINFALL 2.84 INCHES—Continued				STORM OF JUNE 18-19, TOTAL RAINFALL 2.84 INCHES—Continued			
Date and time	Discharge ¹	Accumulated run-off		Date and time	Discharge ¹	Accumulated run-off		Date and time	Discharge ¹	Accumulated run-off	
Feb. 14:				June 18—Con.				June 19—Con.			
11:51 p. m.	0	0	0	10:58 a. m.	0.0050	0.0019	0.0011	3:10 a. m.	0.0205	0.0078	0.1196
11:52 p. m.	.0031	.0012	0	11:00 a. m.	.0100	.0038	.0012	3:15 a. m.	.0341	.0130	.1205
12:00 p. m.	.0040	.0016	.0002	11:03 a. m.	.0166	.0064	.0015	3:20 a. m.	.0567	.0217	.1219
Feb. 15:				11:05 a. m.	.0249	.0095	.0018	3:25 a. m.	.0851	.0326	.1242
12:10 a. m.	.0062	.0024	.0005	11:08 a. m.	.0505	.0193	.0025	3:30 a. m.	.012	.0389	.1272
12:20 a. m.	.010	.0038	.0010	11:10 a. m.	.0851	.0326	.0034	3:35 a. m.	.012	.0389	.1304
12:30 a. m.	.0166	.0064	.0018	11:12 a. m.	.129	.0495	.0048	3:50 a. m.	.0851	.0326	.1394
12:40 a. m.	.0205	.0078	.0030	11:13 a. m.	.183	.0701	.0058	4:00 a. m.	.0702	.0269	.1444
12:50 a. m.	.0249	.0095	.0044	11:15 a. m.	.234	.0896	.0085	4:10 a. m.	.0567	.0217	.1484
12:55 a. m.	.0341	.0130	.0053	11:20 a. m.	.160	.0614	.0148	4:20 a. m.	.0392	.0150	.1515
1:00 a. m.	.0505	.0193	.0067	11:23 a. m.	.120	.0458	.0175	4:30 a. m.	.0249	.0095	.1535
1:10 a. m.	.0270	.0269	.0105	11:25 a. m.	.102	.0389	.0189	4:50 a. m.	.0166	.0064	.1562
1:15 a. m.	.0851	.0326	.0130	11:27 a. m.	.093	.0357	.0201	5:00 a. m.	.0100	.0038	.1570
1:20 a. m.	.110	.0423	.0161	11:30 a. m.	.110	.0423	.0221	5:20 a. m.	.0050	.0019	.1580
1:25 a. m.	.150	.0573	.0203	11:33 a. m.	.120	.0458	.0243	5:40 a. m.	.0031	.0012	.1585
1:30 a. m.	.183	.0701	.0256	11:35 a. m.	.120	.0458	.0258	6:00 a. m.	.0014	.0005	.1588
1:40 a. m.	.221	.0846	.0385	11:45 a. m.	.0775	.0297	.0321	6:20 a. m.	.0014	.0005	.1590
1:50 a. m.	.234	.0896	.0530	11:50 a. m.	.0567	.0217	.0342	6:40 a. m.	.0014	.0005	.1592
2:00 a. m.	.241	.0923	.0682	11:55 a. m.	.0341	.0130	.0356	7:00 a. m.	.0014	.0005	.1594
2:10 a. m.	.234	.0896	.0834	12:00 m.	.0205	.0078	.0365	7:20 a. m.	.0014	.0005	.1596
2:13 a. m.	.234	.0896	.0879	12:05 p. m.	.0130	.0050	.0370	7:40 a. m.	.0014	.0005	.1598
2:20 a. m.	.262	.100	.0990	12:15 p. m.	.0086	.0033	.0377	7:50 a. m.	.0014	.0005	.1599
2:30 a. m.	.292	.112	.1167	12:20 p. m.	.0166	.0064	.0381	7:55 a. m.	.0031	.0012	.1600
2:40 a. m.	.340	.130	.1369	12:23 p. m.	.0341	.0130	.0386	8:00 a. m.	.0073	.0028	.1602
2:50 a. m.	.357	.137	.1591	12:25 p. m.	.0505	.0193	.0391	8:05 a. m.	.0100	.0038	.1605
3:00 a. m.	.340	.130	.1813	12:27 p. m.	.0702	.0269	.0399	8:15 a. m.	.0130	.0050	.1612
3:06 a. m.	.357	.137	.1946	12:30 p. m.	.0775	.0297	.0413	8:20 a. m.	.0130	.0050	.1616
3:10 a. m.	.340	.130	.2035	12:35 p. m.	.0567	.0217	.0434	8:30 a. m.	.0100	.0038	.1623
3:15 a. m.	.292	.112	.2136	12:40 p. m.	.0341	.0130	.0448	8:50 a. m.	.0050	.0019	.1633
3:20 a. m.	.221	.0846	.2218	12:45 p. m.	.0205	.0078	.0457	9:00 a. m.	.0050	.0019	.1636
3:25 a. m.	.150	.0573	.2277	12:50 p. m.	.0130	.0050	.0462	9:10 a. m.	.0031	.0012	.1638
3:30 a. m.	.0932	.0357	.2316	12:55 p. m.	.0073	.0028	.0465	9:20 a. m.	.0022	.0008	.1640
3:40 a. m.	.0567	.0217	.2364	1:00 p. m.	.0050	.0019	.0467	9:40 a. m.	.0014	.0005	.1642
3:50 a. m.	.0341	.0130	.2393	1:10 p. m.	.0031	.0012	.0469	10:00 a. m.	0	0	.1643
4:00 a. m.	.0205	.0078	.2410	1:20 p. m.	.0014	.0005	.0470				
4:10 a. m.	.0148	.0057	.2421	1:40 p. m.	.0007	.0002	.0471				
4:20 a. m.	.0100	.0038	.2429	2:00 p. m.	0	0					
4:30 a. m.	.0050	.0019	.2434	6:40 p. m.	0	0					
4:40 a. m.	.0031	.0012	.2436	7:00 p. m.	.001	.0002					
4:50 a. m.	.0014	.0005	.2437	7:02 p. m.	.0050	.0019					
5:00 a. m.	.0031	.0012	.2438	7:03 p. m.	.0100	.0038	.0471				
5:10 a. m.	.0073	.0028	.2441	7:05 p. m.	.0166	.0064	.0473				
5:20 a. m.	.0100	.0038	.2447	7:10 p. m.	.0293	.0112	.0480				
5:30 a. m.	.0130	.0050	.2454	7:15 p. m.	.0341	.0130	.0490				
5:35 a. m.	.0130	.0050	.2458	7:20 p. m.	.0293	.0112	.0500				
5:40 a. m.	.0130	.0050	.2462	7:30 p. m.	.0249	.0095	.0517				
6:00 a. m.	.0073	.0028	.2475	7:45 p. m.	.0166	.0064	.0537				
6:10 a. m.	.0062	.0024	.2479	8:00 p. m.	.0100	.0038	.0550				
6:20 a. m.	.0062	.0024	.2483	8:20 p. m.	.0050	.0019	.0560				
6:40 a. m.	.0062	.0024	.2491	8:40 p. m.	.0014	.0005	.0564				
7:00 a. m.	.0050	.0019	.2498	9:00 p. m.	.0014	.0005	.0566				
7:15 a. m.	.0031	.0012	.2502	9:20 p. m.	.0007	.0002	.0567				
7:50 a. m.	.0014	.0005	.2507	9:40 p. m.	0	0	.0567				
8:00 a. m.	.0014	.0005	.2508	10:00 p. m.	.0014	.0005	.0568				
8:07 a. m.	.0014	.0005	.2509	10:10 p. m.	.0050	.0019	.0570				
8:10 a. m.	.0031	.0012	.2509	10:20 p. m.	.0062	.0024	.0574				
8:13 a. m.	.0062	.0024	.2510	10:30 p. m.	.0050	.0019	.0578				
8:20 a. m.	.0050	.0019	.2512	10:50 p. m.	.0031	.0012	.0583				
8:30 a. m.	.0073	.0028	.2516	11:00 p. m.	.0031	.0012	.0585				
8:40 a. m.	.0086	.0033	.2521	11:20 p. m.	.0014	.0005	.0588				
9:00 a. m.	.0130	.0050	.2535	11:40 p. m.	.0014	.0005	.0590				
9:10 a. m.	.0148	.0057	.2544	11:50 p. m.	.0014	.0005	.0591				
9:20 a. m.	.0130	.0050	.2553	11:55 p. m.	.0050	.0019	.0592				
9:30 a. m.	.0100	.0038	.2560	12:00 p. m.	.0130	.0050	.0595				
9:40 a. m.	.0100	.0038	.2566	June 19:							
10:00 a. m.	.0040	.0016	.2575	12:05 a. m.	.0249	.0095	.0601				
10:10 a. m.	.0031	.0012	.2577	12:10 a. m.	.0341	.0130	.0610				
10:20 a. m.	.0022	.0008	.2579	12:15 a. m.	.0702	.0269	.0627				
10:40 a. m.	.0022	.0008	.2582	12:20 a. m.	.110	.0423	.0656				
11:00 a. m.	.0014	.0005	.2584	12:25 a. m.	.160	.0614	.0699				
12:00 m.	.0007	.0002	.2588	12:30 a. m.	.248	.0950	.0764				
1:00 p. m.	.0007	.0002	.2591	12:32 a. m.	.248	.0950	.0796				
2:00 p. m.	.0007	.0002	.2594	12:35 a. m.	.221	.0846	.0841				
3:00 p. m.	0	0	.2596	12:40 a. m.	.208	.0796	.0909				
				12:45 a. m.	.183	.0701	.0971				
				12:50 a. m.	.139	.0533	.1022				
				1:00 a. m.	.0932	.0357	.1096				
				1:05 a. m.	.0633	.0242	.1121				
				1:10 a. m.	.0447	.0171	.1138				
				1:15 a. m.	.0341	.0130	.1150				
				1:20 a. m.	.0249	.0095	.1159				
				1:25 a. m.	.0166	.0064	.1166				
				1:35 a. m.	.0100	.0038	.1174				
				1:45 a. m.	.0050	.0019	.1179				
				2:00 a. m.	.0031	.0012	.1183				
				2:20 a. m.	.0014	.0005	.1186				
				2:40 a. m.	.0007	.0002	.1187				
				2:55 a. m.	.0014	.0005	.1188				
				3:00 a. m.	.0031	.0012	.1189				
				3:05 a. m.	.0100	.0038	.1191				
STORM OF JUNE 18-19, TOTAL RAINFALL 2.84 INCHES								STORM OF JULY 8, TOTAL RAINFALL 1.76 INCHES			
June 18:								July 8:			
8:15 a. m.	0	0	0					5:14 a. m. ²	0	0	0
8:40 a. m.	.0007	.0002	.0001					8:20 a. m. ⁴	0	0	0
9:00 a. m.	.0007	.0002	.0002					12:30 p. m.	0	0	0
9:20 a. m.	.0007	.0002	.0003					12:33 p. m.	.0014	.0005	0
9:40 a. m.	.0007	.0002	.0004					12:35 p. m.	.0050	.0019	0
10:00 a. m.	.0007	.0002	.0005					12:36 p. m.	.0100	.0038	0
10:30 a. m.	.0014	.0005	.0007					12:37 p. m.	.0205	.0078	.0001
10:50 a. m.	.0014	.0005	.0009					12:38 p. m.	.0341	.0130	.0003
10:55 a. m.	.0031	.0012	.0010					12:39 p. m.	.0505	.0193	.0006
								12:40 p. m.	.0702	.0269	.0010
								12:42			

TABLE 79.—Run-off from watershed 107 for selected storms, 1939—Continued

STORM OF OCT. 25-27, TOTAL RAINFALL 3.42 INCHES				STORM OF OCT. 25-27, TOTAL RAINFALL 3.42 INCHES—Continued				STORM OF OCT. 25-27, TOTAL RAINFALL 3.42 INCHES—Continued			
Date and time	Discharge	Accumulated run-off		Date and time	Discharge	Accumulated run-off		Date and time	Discharge	Accumulated run-off	
Oct. 25:	Sec.-ft.	In. per hr.	In.	Oct. 26—Con.	Sec.-ft.	In. per hr.	In.	Oct. 27—Con.	Sec.-ft.	In. per hr.	In.
12:27 a. m. ¹				8:42 a. m.	0.0050	0.0019	0.0158	5:05 a. m.	0.375	0.144	0.0700
2:00 a. m.	0	0	0	8:44 a. m.	0.1000	0.0038	0.0159	5:07 a. m.	0.357		0.0747
4:00 a. m.	T	T	0	8:45 a. m.	0.0205	0.0078	0.0160	5:10 a. m.	0.308		0.0811
6:00 a. m.	0.0007	0.0002	0.0002	8:46 a. m.	0.0567	0.0217	0.0162	5:15 a. m.	0.195		0.0747
7:00 a. m.	0.0014	0.0005	0.0005	8:47 a. m.	0.172	0.0657	0.0169	5:20 a. m.	0.129		0.0495
8:00 a. m.	0.0031	0.0012	0.0013	8:48 a. m.	0.375	0.144	0.0186	5:25 a. m.	0.0932		0.0357
9:00 a. m.	0.0031	0.0012	0.0025	8:49 a. m.	0.532	0.204	0.0215	5:30 a. m. ³	0.0633		0.0242
10:00 a. m.	0.0040	0.0016	0.0039	8:50 a. m.	0.510	0.195	0.0248	5:35 a. m.	0.0392		0.0150
11:00 a. m.	0.0040	0.0016	0.0055	8:52 a. m.	0.411	0.157	0.0307	5:40 a. m.	0.0249		0.0095
12:00 p. m.	0.0031	0.0012	0.0069	8:54 a. m.	0.277	0.106	0.0351	5:50 a. m.	0.0130		0.0050
2:00 p. m.	0.0031	0.0012	0.0093	8:55 a. m.	0.221	0.0846	0.0367	6:00 a. m.	0.0073		0.0028
2:20 p. m.	0.0050	0.0019	0.0098	8:57 a. m.	0.160	0.0614	0.0391	6:20 a. m.	0.0031		0.0012
2:30 p. m.	0.0073	0.0028	0.0102	9:00 a. m.	0.0932	0.0357	0.0415	6:40 a. m. ²	0.0014		0.0005
2:31 p. m.	0.0073	0.0028	0.0102	9:05 a. m.	0.0447	0.0171	0.0437	7:00 a. m.	0.0014		0.0005
2:35 p. m.	0.0050	0.0019	0.0104	9:10 a. m. ³	0.0249	0.0095	0.0448	8:00 a. m.	0.0007		0.0002
2:40 p. m.	0.0031	0.0012	0.0105	9:15 a. m.	0.0130	0.0050	0.0454	8:20 a. m.	0.0014		0.0005
3:00 p. m.	0.0014	0.0005	0.0108	9:20 a. m.	0.0100	0.0038	0.0458	8:30 a. m.	0.0031		0.0012
3:30 p. m.	0.0007	0.0002	0.0109	9:30 a. m.	0.0050	0.0019	0.0463	8:50 a. m.	0.0061		0.0023
4:00 p. m.	0.0014	0.0005	0.0111	9:40 a. m.	0.0031	0.0012	0.0466	9:00 a. m.	0.0087		0.0033
4:30 p. m.	0.0031	0.0012	0.0115	10:00 a. m.	0.0007	0.0002	0.0468	9:05 a. m.	0.0100		0.0038
4:45 p. m.	0.0031	0.0012	0.0118	10:20 a. m.	0	0		9:10 a. m.	0.0100		0.0038
5:00 p. m.	0.0022	0.0008	0.0121	Oct. 27:				9:20 a. m.	0.0073		0.0028
6:00 p. m.	0.0014	0.0005	0.0127	4:00 a. m. ²	0	0		9:25 a. m.	0.0073		0.0028
6:10 p. m.	0.0031	0.0012	0.0128	4:05 a. m.	0.0014	0.0005		9:27 a. m.	0.0073		0.0028
6:15 p. m.	0.0040	0.0016	0.0129	4:20 a. m.	0.0014	0.0005	0.0469	9:30 a. m.	0.0100		0.0038
6:25 p. m.	0.0040	0.0016	0.0132	4:30 a. m.	0.0031	0.0012	0.0470	9:32 a. m.	0.0205		0.0078
6:30 p. m.	0.0073	0.0028	0.0134	4:40 a. m.	0.0050	0.0019	0.0473	9:34 a. m.	0.0505		0.0193
6:35 p. m.	0.0130	0.0050	0.0137	4:43 a. m.	0.0073	0.0028	0.0474	9:35 a. m.	0.0702		0.0269
6:38 p. m.	0.0148	0.0057	0.0140	4:45 a. m.	0.0166	0.0064	0.0476	9:38 a. m.	0.110		0.0423
6:40 p. m.	0.0130	0.0050	0.0142	4:47 a. m.	0.0293	0.0112	0.0479	9:40 a. m.	0.110		0.0423
6:50 p. m.	0.0073	0.0028	0.0148	4:49 a. m.	0.0633	0.0242	0.0485	9:45 a. m.	0.0775		0.0297
7:00 p. m.	0.0040	0.0016	0.0152	4:50 a. m.	0.0932	0.0357	0.0490	9:50 a. m.	0.0505		0.0193
7:30 p. m.	0.0014	0.0005	0.0157	4:52 a. m.	0.139	0.0533	0.0505	10:00 a. m.	0.0293		0.0112
8:00 p. m.	T	T	0.0158	4:54 a. m.	0.183	0.0701	0.0526	10:10 a. m.	0.0166		0.0064
10:57 p. m. ¹	0	0		4:55 a. m.	0.195	0.0747	0.0538	10:20 a. m.	0.0130		0.0050
Oct. 26:				4:58 a. m.	0.201	0.0771	0.0576	10:30 a. m. ³	0.0073		0.0028
8:34 a. m. ¹	0	0		5:00 a. m.	0.221	0.0846	0.0603	11:00 a. m.	0.0022		0.0008
8:39 a. m.	0	0		5:02 a. m.	0.292	0.112	0.0636	12:00 m.	0	0	0.1251
8:40 a. m.	0.0014	0.0005		5:04 a. m.	0.357	0.137	0.0767				

² Rain began.³ Rain ended.

TABLE 80.—Run-off from watershed 109 for selected storms, 1939

[Area 1.69 acres; rainfall measured at recording rain gage Y102]

Date and time		Discharge ¹		Accumulated run-off	Date and time		Discharge ¹		Accumulated run-off	Date and time		Discharge ¹		Accumulated run-off
STORM OF JUNE 18-19, TOTAL RAINFALL 2.83 INCHES					STORM OF JUNE 18-19, TOTAL RAINFALL 2.83 INCHES—Continued					STORM OF JUNE 18-19, TOTAL RAINFALL 2.83 INCHES—Continued				
June 18:		Sec.-ft.	In. per hr.	In.	June 18—Con.		Sec.-ft.	In. per hr.	In.	June 19—Con.		Sec.-ft.	In. per hr.	In.
8:50 a. m.	0	0	0	0	11:58 a. m.	0.0288	0.0169	0.2226	0.2226	12:18 a. m.	0.0234	0.0137	0.2647	
9:00 a. m.	.0021	.0012	.0001	.0001	11:59 a. m.	.0186	.0109	.2228	.2228	12:19 a. m.	.0348	.0204	.2650	
9:05 a. m.	.0021	.0012	.0002	.0002	12:00 m.	.0103	.0084	.2230	.2230	12:20 a. m.	.0610	.0358	.2655	
9:15 a. m.	.0073	.0043	.0007	.0007	12:02 p. m.	.0073	.0043	.2232	.2232	12:21 a. m.	.103	.0606	.2663	
9:20 a. m.	.0021	.0012	.0009	.0009	12:05 p. m.	.0021	.0012	.2233	.2233	12:22 a. m.	.156	.0915	.2676	
9:30 a. m.	0	0	.0010	.0010	12:15 p. m.	.0021	.0012	.2234	.2234	12:23 a. m.	.220	.129	.2694	
10:20 a. m.	0	0	.0010	.0010	12:17 p. m.	.0021	.0012	.2234	.2234	12:25 a. m.	.264	.155	.2741	
10:45 a. m.	.0021	.0012	.0013	.0013	12:19 p. m.	.0073	.0043	.2235	.2235	12:28 a. m.	.280	.164	.2821	
11:00 a. m.	.0021	.0012	.0016	.0016	12:20 p. m.	.0105	.0062	.2236	.2236	12:30 a. m.	.313	.184	.2850	
11:03 a. m.	.0021	.0012	.0017	.0017	12:21 p. m.	.0234	.0137	.2238	.2238	12:33 a. m.	.347	.204	.2945	
11:05 a. m.	.0105	.0062	.0018	.0018	12:22 p. m.	.0471	.0276	.2241	.2241	12:35 a. m.	.330	.194	.3011	
11:06 a. m.	.0407	.0239	.0021	.0021	12:23 p. m.	.113	.0663	.2249	.2249	12:40 a. m.	.207	.121	.3143	
11:07 a. m.	.0851	.0499	.0027	.0027	12:24 p. m.	.220	.129	.2265	.2265	12:43 a. m.	.156	.0915	.3196	
11:08 a. m.	.145	.0851	.0038	.0038	12:25 p. m.	.365	.214	.2294	.2294	12:45 a. m.	.123	.0722	.3223	
11:09 a. m.	.220	.129	.0056	.0056	12:27 p. m.	.403	.236	.2369	.2369	12:50 a. m.	.0610	.0358	.3268	
11:10 a. m.	.313	.184	.0082	.0082	12:30 p. m.	.330	.194	.2477	.2477	12:53 a. m.	.0348	.0204	.3282	
11:12 a. m.	.463	.272	.0162	.0162	12:33 p. m.	.207	.121	.2556	.2556	12:55 a. m.	.0234	.0137	.3288	
11:14 a. m.	.645	.378	.0270	.0270	12:34 p. m.	.168	.0986	.2574	.2574	12:57 a. m.	.0143	.0084	.3290	
11:15 a. m.	.749	.440	.0338	.0338	12:35 p. m.	.134	.0786	.2589	.2589	1:00 a. m.	.0073	.0043	.3291	
11:17 a. m.	.777	.456	.0489	.0489	12:37 p. m.	.0940	.0552	.2611	.2611	1:05 a. m.	.0045	.0026	.3294	
11:20 a. m.	.671	.394	.0702	.0702	12:38 p. m.	.0686	.0403	.2619	.2619	1:10 a. m.	.0021	.0012	.3296	
11:25 a. m.	.527	.309	.0995	.0995	12:40 p. m.	.0348	.0204	.2629	.2629	1:30 a. m.	.0010	.0006	.3299	
11:28 a. m.	.484	.284	.1144	.1144	12:41 p. m.	.0234	.0137	.2632	.2632	2:00 a. m.	.0010	.0006	.3301	
11:30 a. m.	.527	.309	.1243	.1243	12:42 p. m.	.0186	.0109	.2634	.2634	2:35 a. m.	.0010	.0006	.3303	
11:33 a. m.	.596	.350	.1408	.1408	12:43 p. m.	.0143	.0084	.2636	.2636	3:00 a. m.	.0010	.0006	.3305	
11:35 a. m.	.573	.336	.1522	.1522	12:44 p. m.	.0105	.0062	.2637	.2637	8:30 a. m.	0	0	.3305	
11:40 a. m.	.365	.214	.1751	.1751	12:45 p. m.	.0073	.0043	.2638	.2638					
11:45 a. m.	.264	.155	.2051	.2051	12:50 p. m.	.0021	.0012	.2640	.2640					
11:48 a. m.	.207	.121	.2120	.2120	1:00 p. m.	0	0	.2641	.2641					
11:50 a. m.	.156	.0915	.2155	.2155	12:00 p. m.	0	0	.2641	.2641					
11:52 a. m.	.134	.0786	.2183	.2183	June 19:									
11:53 a. m.	.103	.0606	.2195	.2195	12:10 a. m.	.0021	.0012	.2642	.2642					
11:55 a. m.	.0686	.0403	.2212	.2212	12:15 a. m.	.0045	.0026	.2644	.2644	July 8:				
11:56 a. m.	.0538	.0316	.2218	.2218	12:16 a. m.	.0045	.0026	.2644	.2644	5:11 a. m. ¹	0	0	0	
11:57 a. m.	.0407	.0239	.2223	.2223	12:17 a. m.	.0105	.0062	.2645	.2645	5:14 a. m.	0	0	0	

¹ Observed flow without corrections for base flow.² Rain began.

TABLE 80.—Run-off from watershed 109 for selected storms, 1939—Continued

STORM OF JULY 8, TOTAL RAINFALL 2.48 INCHES—Continued				STORM OF JULY 8, TOTAL RAINFALL 2.48 INCHES—Continued				STORM OF OCTOBER 25-27, TOTAL RAINFALL 4.12 INCHES—Continued			
Date and time	Discharge	Accumulated run-off		Date and time	Discharge	Accumulated run-off		Date and time	Discharge	Accumulated run-off	
July 8—Con.	Sec.-ft.	In. per hr.	In.	July 8—Con.	Sec.-ft.	In. per hr.	In.	Oct. 26—Con.	Sec.-ft.	In. per hr.	In.
5:15 a. m.	0.047	0.0276	0.0001	1:13 p. m.	0.365	0.214	01.0791	8:55 a. m.	0.180	0.106	0.1164
5:16 a. m.	.113	.0664	.0009	1:15 p. m.	.264	.155	1.0852	8:56 a. m.	.123	.0722	.1179
5:17 a. m.	.330	.194	.0030	1:17 p. m.	.181	.106	1.0895	8:57 a. m.	.0766	.0449	.1189
5:18 a. m.	.892	.524	.0086	1:20 p. m.	.103	.0604	1.0937	8:58 a. m.	.0610	.0358	.1196
5:19 a. m.	1.45	.851	.0201	1:22 p. m.	.069	.0405	1.0953	8:59 a. m.	.0407	.0239	.1201
5:20 a. m.	2.41	1.42	.0397	1:25 p. m.	.035	.0205	1.0968	9:00 a. m.	.0234	.0137	.1204
5:21 a. m.	2.58	1.51	.0641	1:27 p. m.	.023	.0135	1.0974	9:01 a. m.	.0143	.0084	.1206
5:24 a. m. ³	1.53	.90	.1246	1:30 p. m.	.014	.0082	1.0979	9:02 a. m.	.0073	.0043	.1207
5:25 a. m.	1.15	.675	.1378	1:33 p. m.	.007	.0041	1.0982	9:04 a. m.	.0021	.0012	.1208
5:26 a. m.	.833	.489	.1475	1:40 p. m.	.004	.0023	1.0986	9:05 a. m.	T	T	
5:27 a. m.	.621	.364	.1546	1:45 p. m.	.003	.0018	1.0988	9:10 a. m.	0	0	
5:28 a. m.	.403	.237	.1596	2:30 p. m. ³	.002	.0012	1.0999	12:00 m. ³	0	0	
5:29 a. m.	.264	.155	.1629	3:00 p. m.	0	0	1.0999	Oct. 27:			
5:30 a. m.	.181	.106	.1651	STORM OF OCTOBER 25-27, TOTAL RAINFALL 4.12 INCHES				4:00 a. m. ²	0	0	
5:31 a. m.	.123	.0722	.1666	Oct. 25:				4:03 a. m.	0	0	.1208
5:32 a. m.	.077	.0452	.1676	12:21 a. m. ¹	0	0	0	4:04 a. m.	.0073	.0043	.1208
5:33 a. m.	.047	.0276	.1682	8:25 a. m.	T	T	0	4:05 a. m.	.0073	.0043	.1209
5:35 a. m.	.023	.0135	.1689	8:30 a. m.	.0021	.0012	.0001	4:10 a. m.	.0073	.0043	.1213
5:36 a. m.	.010	.0058	.1691	8:40 a. m.	.0021	.0012	.0007	4:20 a. m.	.0073	.0043	.1220
5:38 a. m.	.004	.0023	.1692	9:00 a. m.	.0021	.0012	.0011	4:30 a. m.	.0073	.0043	.1227
5:40 a. m.	.002	.0012	.1693	9:20 a. m.	.0021	.0012	.0015	4:35 a. m.	.0073	.0043	.1231
5:45 a. m.	.001	.0001		9:40 a. m.	.0021	.0012	.0019	4:40 a. m.	.0073	.0043	.1235
5:50 a. m.	0	0		10:00 a. m.	.0021	.0012	.0022	4:42 a. m.	.0105	.0062	.1237
7:39 a. m. ²	0	0	.1693	10:20 a. m.	.0010	.0006	.0023	4:44 a. m.	.0234	.0137	.1240
7:40 a. m.	0	0	.1693	10:40 a. m.	T	T		4:45 a. m.	.0347	.0204	.1243
7:41 a. m.	.010	.0059	.1694	11:00 a. m.	T	T		4:46 a. m.	.134	.0786	.1251
7:42 a. m.	.035	.0205	.1695	11:20 a. m.	T	T		4:47 a. m.	.193	.113	.1267
7:43 a. m.	.069	.0404	.1700	11:40 a. m.	T	T		4:48 a. m.	.234	.137	.1288
7:44 a. m.	.123	.0721	.1709	12:00 m.	T	T		4:50 a. m.	.296	.174	.1340
7:45 a. m.	.280	.164	.1727	12:30 p. m.	T	T		4:52 a. m.	.383	.225	.1407
7:47 a. m.	.573	.336	.1819	1:00 p. m.	T	T		4:55 a. m.	.462	.271	.1531
7:50 a. m.	.484	.284	.1974	3:20 p. m.	T	T	.0023	4:58 a. m.	.526	.309	.1676
7:51 a. m.	.645	.378	.2029	3:40 p. m.	.0021	.0012	.0025	5:00 a. m.	.669	.393	.1794
7:52 a. m.	.892	.523	.2104	4:00 p. m.	.0021	.0012	.0029	5:03 a. m.	.803	.471	.2010
7:53 a. m.	1.41	.827	.2216	4:10 p. m.	.0045	.0026	.0032	5:05 a. m.	.775	.455	.2164
7:54 a. m.	2.06	1.21	.2386	4:20 p. m.	.0021	.0012	.0035	5:06 a. m.	.721	.423	.2237
7:55 a. m.	2.63	1.54	.2616	4:40 p. m.	.0021	.0012	.0039	5:07 a. m.	.620	.364	.2303
7:57 a. m.	3.29	1.93	.3196	5:00 p. m.	.0021	.0012	.0043	5:08 a. m.	.572	.336	.2361
7:59 a. m.	3.41	2.00	.3849	5:20 p. m.	.0021	.0012	.0047	5:09 a. m.	.483	.283	.2413
8:00 a. m.	3.35	1.96	.4179	5:40 p. m.	.0021	.0012	.0051	5:10 a. m.	.383	.225	.2455
8:03 a. m.	2.69	1.58	.5064	6:00 p. m.	.0010	.0006	.0054	5:11 a. m.	.280	.164	.2487
8:05 a. m.	2.26	1.33	.5550	6:20 p. m.	.0010	.0006	.0056	5:12 a. m.	.234	.137	.2512
8:07 a. m.	1.69	.992	.5936	6:40 p. m.	.0010	.0006	.0058	5:13 a. m.	.193	.113	.2533
8:08 a. m.	1.45	.850	.6089	7:00 p. m.	.0010	.0006	.0060	5:14 a. m.	.156	.0915	.2550
8:10 a. m.	.984	.577	.6327	7:20 p. m.	.0010	.0006	.0062	5:15 a. m.	.134	.0786	.2564
8:12 a. m.	.671	.393	.6489	7:40 p. m.	.0010	.0006	.0064	5:16 a. m.	.113	.0663	.2576
8:14 a. m.	.422	.247	.6596	8:00 p. m.	.0010	.0006	.0066	5:17 a. m.	.0851	.0499	.2586
8:15 a. m.	.347	.203	.6633	8:20 p. m.	.0010	.0006	.0068	5:18 a. m.	.0766	.0499	.2594
8:20 a. m. ³	.181	.106	.6761	8:40 p. m.	.0010	.0006	.0070	5:19 a. m.	.0686	.0403	.2601
8:23 a. m.	.113	.0663	.6804	9:00 p. m.	.0010	.0006	.0072	5:20 a. m.	.0538	.0316	.2607
8:25 a. m.	.077	.0461	.6823	9:20 p. m.	.0010	.0006	.0073	5:25 a. m.	.0347	.0204	.2609
8:27 a. m.	.054	.0316	.6836	9:40 p. m.	T	T		5:30 a. m.	.0288	.0169	.2625
8:30 a. m.	.023	.0135	.6847	10:00 p. m.	T	T		5:40 a. m.	.0234	.0137	.2651
8:34 a. m.	.014	.0082	.6854	10:20 p. m.	T	T		6:00 a. m.	.0186	.0109	.2692
8:35 a. m.	.007	.0041	.6855	10:40 p. m.	.0045	.0026	.0077	6:30 a. m.	.0105	.0062	.2735
8:38 a. m.	.004	.0023	.6857	11:00 p. m.	.0021	.0012	.0083	6:49 a. m.	.0045	.0026	.2749
8:45 a. m.	.002	.0012	.6859	11:20 p. m.	T	T		6:55 a. m.	.0073	.0043	.2753
9:00 a. m.	.001	.0006	.6861	11:40 p. m.	T	T		7:00 a. m.	.0073	.0043	.2757
9:15 a. m.	0	0	.6862	12:00 p. m.	T	T		7:20 a. m.	.0059	.0035	.2770
12:12 p. m. ²	0	0		Oct. 26:				7:30 a. m.	.0045	.0026	.2775
12:30 p. m.	0	0	.6862	1:29 a. m.	T	T		7:35 a. m.	.0045	.0026	.2777
12:31 p. m.	.002	.0012	.6862	1:40 a. m.	T	T		7:40 a. m.	.0059	.0035	.2780
12:32 p. m.	.023	.0135	.6863	2:00 a. m.	T	T		7:45 a. m.	.0073	.0043	.2783
12:33 p. m.	.085	.0498	.6868	2:20 a. m.	T	T		7:52 a. m.	.0073	.0043	.2788
12:34 p. m.	.330	.193	.6888	2:40 a. m.	T	T		7:55 a. m.	.0105	.0062	.2791
12:35 p. m.	1.08	.634	.6923	3:00 a. m.	T	T		8:00 a. m.	.0105	.0062	.2796
12:37 p. m.	2.47	1.45	.7301	4:00 a. m.	T	T		8:15 a. m.	.0143	.0084	.2814
12:39 p. m.	1.78	1.04	.7717	5:00 a. m.	T	T		8:30 a. m.	.0186	.0109	.2838
12:40 p. m.	1.33	.780	.7954	6:00 a. m.	T	T		8:40 a. m.	.0186	.0109	.2856
12:41 p. m.	.953	.558	.8065	7:00 a. m.	T	T		8:50 a. m.	.0186	.0109	.2874
12:42 p. m.	.671	.393	.8144	8:37 a. m.	.0021	.0012	.0095	9:00 a. m.	.0186	.0109	.2892
12:43 p. m.	.442	.259	.8198	8:39 a. m.	.0073	.0043	.0096	9:10 a. m.	.0186	.0109	.2910
12:45 p. m.	.235	.138	.8264	8:40 a. m.	.0105	.0062	.0097	9:20 a. m.	.0143	.0084	.2926
12:46 p. m.	.181	.106	.8284	8:41 a. m.	.0686	.0403	.0101	9:25 a. m.	.0143	.0084	.2933
12:47 p. m.	.123	.0721	.8299	8:42 a. m.	.180	.106	.0113	9:27 a. m.	.0143	.0084	.2936
12:49 p. m.	.077	.0451	.8318	8:43 a. m.	.347	.203	.0139	9:28 a. m.	.0234	.0137	.2938
12:50 p. m.	.113	.0663	.8327	8:45 a. m.	.526	.309	.0225	9:29 a. m.	.0347	.0204	.2941
12:51 p. m.	.220	.129	.8343	8:46 a. m.	1.22	.716	.0311	9:30 a. m.	.0610	.0358	.2946
12:52 p. m.	.384	.225	.8372	8:47 a. m.	2.00	1.17	.0468	9:31 a. m.	.156	.0915	.2957
12:53 p. m.	.862	.505	.8432	8:48 a. m.	1.69	.992	.0648	9:32 a. m.	.264	.155	.2978
12:54 p. m.	1.78	1.04	.8557	8:49 a. m.	1.25	.733	.0792	9:33 a. m.	.365	.214	.3009
12:55 p. m.	2.58	1.51	.8774	8:50 a. m.	.982	.576	.0901	9:35 a. m.	.483	.284	.3092
12:56 p. m.	2.74	1.61	.9034	8:51 a. m.	.748	.440	.0986	9:37 a. m.	.421	.247	.3180
12:57 p. m.	2.52	1.48	.9291	8:52 a. m.	.620	.364	.1053	9:39 a. m.	.296	.174	.3250
12:58 p. m.	2.06	1.21	.9515	8:53 a. m.	.441	.259	.1105	9:40 a. m.	.220	.129	.3275
1:00 p. m.	1.45	.850	.9858	8:54 a. m.	.296	.174	.1141	9:41 a. m.	.180	.106	.3295
1:02 p. m.	1.02	.598	1.0099					9:42 a. m.	.145	.0851	.3311
1:05 p. m.	.696	.408	1.0350					9:43 a. m.	.113	.0663	.3324
1:08 p. m.	.621	.364	1.0543					9:44 a. m.	.0851	.0499	.3334
1:10 p. m.	.550	.322	1.0657					9:45 a. m.	.0610	.0358	.3341
								9:48 a. m.	.0407	.0239	.3356

¹ Rain began.² Rain ended.

TABLE 80.—Run-off from watershed 109 for selected storms, 1939—Continued

Date and time	Discharge	Accumulated run-off	Date and time	Discharge	Accumulated run-off	Date and time	Discharge	Accumulated run-off
STORM OF OCTOBER 25-27, TOTAL RAIN-FALL 4.12 INCHES—Continued			STORM OF OCTOBER 25-27, TOTAL RAIN-FALL 4.12 INCHES—Continued			STORM OF OCTOBER 25-27, TOTAL RAIN-FALL 4.12 INCHES—Continued		
Oct. 27—Con.	Sec.-ft.	In. per hr.	Oct. 27—Con.	Sec.-ft.	In. per hr.	Oct. 27—Con.	Sec.-ft.	In. per hr.
9:50 a. m.	0.0347	0.0204	1:38 p. m.	0.0186	0.0109	1:51 p. m.	0.0610	0.0358
9:55 a. m.	.0234	.0137	1:39 p. m.	.0186	.0109	1:53 p. m.	.0471	.0276
10:00 a. m.	.0143	.0084	1:40 p. m.	.0686	.0403	1:55 p. m.	.0347	.0204
10:05 a. m.	.0073	.0043	1:41 p. m.	.103	.0606	1:57 p. m.	.0234	.0137
10:10 a. m.	.0045	.0026	1:42 p. m.	.234	.137	2:00 p. m.	.0143	.0084
10:15 a. m.	.0021	.0012	1:43 p. m.	.264	.155	2:05 p. m.	.0105	.0062
10:20 a. m.	.0010	.0006	1:45 p. m.	.220	.129	2:10 p. m.	.0073	.0043
10:25 a. m.	T	T	1:46 p. m.	.180	.106	2:15 p. m.	.0045	.0026
10:35 a. m.	0	0	1:47 p. m.	.156	.0915	2:25 p. m.	.0021	.0012
1:36 p. m.	0	0	1:48 p. m.	.134	.0786	2:45 p. m.	T	T
1:37 p. m.	.0021	.0012	1:49 p. m.	.103	.0606	3:00 p. m.	0	0
			1:50 p. m.	.0766	.0449			

TABLE 81.—Run-off from watershed 110 for selected storms, 1939

[Area 1.27 acres; rainfall measured at recording rain gage 107]

Date and time	Discharge ¹	Accumulated run-off	Date and time	Discharge ¹	Accumulated run-off	Date and time	Discharge ¹	Accumulated run-off
STORM OF JUNE 18-19, TOTAL RAINFALL 3.20 INCHES			STORM OF JUNE 18-19, TOTAL RAINFALL 3.20 INCHES—Continued			STORM OF JUNE 18-19, TOTAL RAINFALL 3.20 INCHES—Continued		
June 18:	Sec.-ft.	In. per hr.	June 18—Con.	Sec.-ft.	In. per hr.	June 18—Con.	Sec.-ft.	In. per hr.
8:00 a. m.	0	0	11:55 a. m.	0.196	0.153	9:42 p. m.	0.0298	0.0233
8:10 a. m.	.0018	.0014	12:00 p. m.	.172	.134	9:44 p. m.	.0529	.0413
8:20 a. m.	.0018	.0014	12:10 p. m.	.138	.108	9:50 p. m.	.0298	.0233
8:40 a. m.	.0028	.0022	12:18 p. m.	.149	.116	10:00 p. m.	.0298	.0233
8:50 a. m.	.0018	.0014	12:20 p. m.	.184	.143	10:15 p. m.	.0298	.0233
8:53 a. m.	.0038	.0030	12:25 p. m.	.236	.184	10:30 p. m.	.0298	.0233
8:54 a. m.	.0406	.0317	12:28 p. m.	.265	.207	10:45 p. m.	.0298	.0233
8:55 a. m.	.0991	.0774	12:30 p. m.	.250	.195	11:00 p. m.	.0298	.0233
8:57 a. m.	.0742	.0579	12:35 p. m.	.209	.163	11:15 p. m.	.0298	.0233
9:00 a. m.	.0465	.0363	12:40 p. m.	.184	.143	11:30 p. m.	.0298	.0233
9:03 a. m.	.0350	.0273	12:45 p. m.	.160	.125	11:45 p. m.	.0298	.0233
9:04 a. m.	.0465	.0363	12:50 p. m.	.138	.108	11:50 p. m.	.0298	.0233
9:05 a. m.	.0821	.0681	1:00 p. m.	.108	.0845	11:51 p. m.	.0406	.0317
9:07 a. m.	.0149	.116	1:10 p. m.	.0904	.0706	11:52 p. m.	.0465	.0363
9:10 a. m.	.0821	.0681	1:11 p. m.	.0529	.0414	11:53 p. m.	.0529	.0413
9:11 a. m.	.0596	.0465	1:12 p. m.	.0298	.0233	11:54 p. m.	.0667	.0521
9:12 a. m.	.0529	.0413	1:15 p. m.	.0298	.0233	11:55 p. m.	.0821	.0641
9:13 a. m.	.0406	.0317	1:30 p. m.	.0247	.0193	11:58 p. m.	.108	.0845
9:14 a. m.	.0350	.0273	2:00 p. m.	.0247	.0193	12:00 p. m.	.0821	.0641
9:15 a. m.	.0247	.0193	2:35 p. m.	.0247	.0193	June 19:		
9:30 a. m.	.0200	.0156	2:45 p. m.	.0247	.0193	12:02 a. m.	.0596	.0465
9:40 a. m.	.0298	.0233	3:00 p. m.	.0200	.0156	12:05 a. m.	.0821	.0641
9:42 a. m.	.0298	.0233	4:00 p. m.	.0200	.0156	12:10 a. m.	.0821	.0641
9:43 a. m.	.0529	.0413	4:45 p. m.	.0200	.0156	12:11 a. m.	.0991	.0774
9:45 a. m.	.0465	.0363	4:55 p. m.	.0200	.0156	12:12 a. m.	.128	.0996
9:50 a. m.	.0298	.0233	5:00 p. m.	.0200	.0156	12:13 a. m.	.160	.125
10:00 a. m.	.0298	.0233	5:40 p. m.	.0200	.0156	12:14 a. m.	.196	.153
10:20 a. m.	.0298	.0233	6:00 p. m.	.0200	.0156	12:15 a. m.	.236	.184
10:25 a. m.	.0298	.0233	6:30 p. m.	.0200	.0156	12:16 a. m.	.296	.231
10:27 a. m.	.0465	.0363	6:38 p. m.	.0200	.0156	12:17 a. m.	.363	.284
10:30 a. m.	.0821	.0683	6:45 p. m.	.0247	.0193	12:18 a. m.	.438	.342
10:31 a. m.	.0821	.0683	6:47 p. m.	.0247	.0193	12:20 a. m.	.419	.327
10:35 a. m.	.0667	.0521	6:48 p. m.	.118	.0919	12:23 a. m.	.419	.327
10:40 a. m.	.0529	.0413	6:50 p. m.	.138	.108	12:25 a. m.	.381	.298
10:45 a. m.	.0406	.0317	6:52 p. m.	.138	.108	12:27 a. m.	.458	.358
10:50 a. m.	.0406	.0317	6:53 p. m.	.172	.134	12:29 a. m.	.566	.442
10:52 a. m.	.0406	.0317	6:55 p. m.	.222	.173	12:30 a. m.	.566	.442
10:54 a. m.	.0667	.0512	6:56 p. m.	.209	.163	12:33 a. m.	.419	.327
10:55 a. m.	.0904	.0706	6:58 p. m.	.149	.116	12:35 a. m.	.328	.256
10:57 a. m.	.128	.0996	7:00 p. m.	.118	.0919	12:38 a. m.	.280	.219
11:00 a. m.	.149	.116	7:03 p. m.	.172	.134	12:40 a. m.	.280	.219
11:02 a. m.	.184	.143	7:05 p. m.	.138	.108	12:45 a. m.	.250	.195
11:04 a. m.	.236	.184	7:07 p. m.	.0904	.0706	12:48 a. m.	.209	.163
11:05 a. m.	.265	.207	7:09 p. m.	.0667	.0521	12:49 a. m.	.128	.0996
11:07 a. m.	.346	.270	7:10 p. m.	.0596	.0465	12:50 a. m.	.108	.0919
11:08 a. m.	.566	.442	7:15 p. m.	.0904	.0706	12:55 a. m.	.108	.0919
11:10 a. m.	.738	.576	7:17 p. m.	.0667	.0521	1:00 a. m.	.0991	.0774
11:12 a. m.	.877	.685	7:18 p. m.	.0529	.0413	1:05 a. m.	.0667	.0521
11:15 a. m.	.661	.516	7:20 p. m.	.0350	.0273	1:10 a. m.	.0529	.0413
11:17 a. m.	.521	.407	7:25 p. m.	.0298	.0233	1:15 a. m.	.0465	.0363
11:20 a. m.	.479	.374	7:30 p. m.	.0298	.0233	1:30 a. m.	.0406	.0317
11:23 a. m.	.419	.327	7:33 p. m.	.0465	.0363	2:00 a. m.	.0406	.0317
11:25 a. m.	.438	.342	7:35 p. m.	.0350	.0273	2:30 a. m.	.0406	.0317
11:27 a. m.	.588	.459	7:40 p. m.	.0298	.0233	2:45 a. m.	.0406	.0317
11:30 a. m.	.686	.536	7:50 p. m.	.0298	.0233	3:00 a. m.	.0529	.0413
11:32 a. m.	.543	.424	8:00 p. m.	.0298	.0233	3:15 a. m.	.0596	.0465
11:33 a. m.	.438	.342	8:10 p. m.	.0298	.0233	3:30 a. m.	.0742	.0579
11:35 a. m.	.363	.284	8:30 p. m.	.0298	.0233	3:45 a. m.	.0742	.0579
11:40 a. m.	.346	.270	9:00 p. m.	.0247	.0193	4:00 a. m.	.0596	.0465
11:43 a. m.	.346	.270	9:30 p. m.	.0200	.0156	4:15 a. m.	.0529	.0413
11:45 a. m.	.296	.231	9:34 p. m.	.0200	.0156	4:30 a. m.	.0465	.0363
11:50 a. m.	.236	.184	9:40 p. m.	.0298	.0233	4:45 a. m.	.0465	.0363

¹ Observed flow without corrections for base flow.

TABLE 81.—Run-off from watershed 110 for selected storms, 1939—Continued

Date and time	Discharge	Accumulated run-off	Date and time	Discharge	Accumulated run-off	Date and time	Discharge	Accumulated run-off
STORM OF JUNE 18-19, TOTAL RAINFALL 3.20 INCHES—Continued			STORM OF JULY 8, TOTAL RAINFALL 2.67 INCHES—Continued			STORM OF OCT. 25-27, TOTAL RAINFALL 4.12 INCHES—Continued		
June 19—Con.	Sec.-ft.	In. per hr.	July 8—Con.	Sec.-ft.	In. per hr.	Oct. 26—Con.	Sec.-ft.	In. per hr.
5:00 a. m.	0.0465	0.0363	8:16 a. m.	1.16	0.906	8:50 a. m.	0.877	0.685
5:20 a. m.	.0465	.0363	8:17 a. m.	1.03	.804	8:52 a. m.	.686	.536
5:40 a. m.	.0465	.0363	8:18 a. m.	.906	.708	8:53 a. m.	.500	.390
6:00 a. m.	.0406	.0317	8:19 a. m.	.792	.618	8:54 a. m.	.346	.270
6:20 a. m.	.0406	.0317	8:20 a. m.	.521	.407	8:55 a. m.	.250	.195
6:40 a. m.	.0406	.0317	8:22 a. m.	.400	.313	9:00 a. m.	.138	.108
7:00 a. m.	.0406	.0317	8:24 a. m.	.280	.218	9:05 a. m.	.0821	.0641
7:20 a. m.	.0406	.0117	8:25 a. m.	.236	.184	9:10 a. m.	.0529	.0413
7:40 a. m.	.0406	.0317	8:28 a. m.	.184	.143	9:15 a. m.	.0298	.0233
8:00 a. m.	.0406	.0317	8:30 a. m.	.138	.108	9:20 a. m.	.0200	.0156
8:30 a. m.	.0350	.0273	8:35 a. m.	.0991	.0774	9:25 a. m.	.0121	.0094
9:00 a. m.	.0350	.0273	8:40 a. m.	.0821	.0641	9:32 a. m.	.0061	.0048
9:30 a. m.	.0298	.0233	8:50 a. m.	.0465	.0363	9:47 a. m.	.0018	.0014
10:00 a. m.	.0298	.0233	9:00 a. m. ³	.0298	.0233	10:10 a. m.	0	0
11:00 a. m.	.0247	.0193	9:10 a. m.	.0200	.0156	10:40 a. m. ⁴	0	0
12:00 p. m.	.0121	.0094	9:20 a. m.	.0121	.0094	Oct. 27:		
1:00 p. m.	.0038	.0030	9:35 a. m.	.0061	.0048	3:55 a. m.	0	0
2:00 p. m.	0	0	9:50 a. m.	.0038	.0030	4:55 a. m.	0	0
12:00 p. m.	0	0	10:00 a. m.	.0018	.0014	5:00 a. m.	T	T
			10:20 a. m.	0	0	5:02 a. m.	.0038	.0030
			12:30 p. m.	0	0	5:05 a. m.	.0061	.0048
			12:32 p. m.	.0018	.0014	5:20 a. m.	.0089	.0070
			12:34 p. m.	.0061	.0048	5:30 a. m.	.0121	.0094
			12:35 p. m.	.0121	.0094	5:40 a. m.	.0121	.0094
			12:36 p. m.	.118	.0996	6:00 a. m.	.0121	.0094
			12:37 p. m.	.363	.284	6:30 a. m.	.0158	.0123
			12:38 p. m.	.712	.556	6:47 a. m.	.0158	.0123
			12:39 p. m.	1.20	.937	6:55 a. m.	.0158	.0123
			12:40 p. m.	1.50	1.17	7:00 a. m.	.0158	.0123
			12:41 p. m.	1.10	.855	7:20 a. m.	.0158	.0123
			12:42 p. m.	.764	.597	7:25 a. m.	.0158	.0123
			12:43 p. m.	.500	.390	7:40 a. m.	.0158	.0123
			12:44 p. m.	.296	.231	8:00 a. m.	.0200	.0156
			12:45 p. m.	.250	.195	8:20 a. m.	.0200	.0156
			12:50 p. m.	.184	.143	8:40 a. m.	.0181	.0174
			12:52 p. m.	.184	.143	8:55 a. m.	.0247	.0193
			12:53 p. m.	.566	.442	9:00 a. m.	.0247	.0193
			12:54 p. m.	1.20	.937	9:17 a. m.	.0247	.0193
			12:55 p. m.	1.62	1.26	9:20 a. m.	.0247	.0193
			12:57 p. m.	2.02	1.57	9:35 a. m.	.0298	.0233
			12:58 p. m.	1.70	1.33	9:46 a. m.	.0350	.0273
			12:59 p. m.	1.50	1.17	10:00 a. m.	.0350	.0273
			1:00 p. m.	1.23	.960	10:10 a. m.	.0350	.0273
			1:01 p. m.	1.03	.804	10:20 a. m.	.0350	.0273
			1:02 p. m.	.848	.662	10:40 a. m.	.0350	.0273
			1:03 p. m.	.712	.556	11:00 a. m.	.0350	.0273
			1:05 p. m.	.636	.497	11:20 a. m.	.0350	.0273
			1:10 p. m.	.661	.516	11:40 a. m.	.0350	.0273
			1:11 p. m.	.588	.459	12:00 m.	.0350	.0273
			1:12 p. m.	.521	.407	12:20 p. m.	.0350	.0273
			1:13 p. m.	.458	.358	12:40 p. m.	.0298	.0233
			1:14 p. m.	.363	.284	1:00 p. m.	.0298	.0233
			1:15 p. m.	.265	.207	1:20 p. m.	.0298	.0233
			1:20 p. m.	.250	.195	1:40 p. m.	.0298	.0233
			1:30 p. m.	.196	.153	2:00 p. m.	.0298	.0233
			1:40 p. m.	.149	.116	2:20 p. m.	.0298	.0233
			1:50 p. m.	.118	.0919	2:40 p. m.	.0298	.0233
			2:00 p. m.	.108	.0845	3:00 p. m.	.0298	.0233
			2:10 p. m.	.0904	.0706	3:20 p. m.	.0298	.0233
			2:20 p. m. ⁴	.0742	.0579	3:24 p. m.	.0298	.0233
			2:40 p. m.	.0529	.0413	3:40 p. m.	.0298	.0233
			3:00 p. m.	.0406	.0317	4:00 p. m.	.0298	.0233
			3:20 p. m.	.0298	.0233	4:20 p. m.	.0298	.0233
			3:40 p. m.	.0200	.0156	4:40 p. m.	.0298	.0233
			4:00 p. m.	.0121	.0094	5:00 p. m.	.0298	.0233
			4:20 p. m.	.0089	.0070	5:20 p. m.	.0298	.0233
			4:40 p. m.	.0061	.0048	5:40 p. m.	.0298	.0233
			5:00 p. m.	.0038	.0030	6:00 p. m.	.0298	.0233
			5:20 p. m.	.0018	.0014	6:20 p. m.	.0298	.0233
			5:40 p. m.	T	T	6:40 p. m.	.0298	.0233
			6:00 p. m.	0	0	7:00 p. m.	.0247	.0193
						8:00 p. m.	.0200	.0156
						9:00 p. m.	.0158	.0123
						10:00 p. m.	.0121	.0094
						11:00 p. m.	.0089	.0070
						11:20 p. m.	.0089	.0070
						11:40 p. m.	.0061	.0048
						12:00 p. m.	.0061	.0048
						Oct. 28:		
						12:20 a. m.	.0061	.0048
						12:30 a. m. ⁴	.0049	.0039
						1:00 a. m.	.0038	.0030
						2:00 a. m.	.0028	.0007
						3:00 a. m.	0	0

² Rain began.³ Record between 9:00 a. m. and 10:20 a. m. estimated.⁴ Rain ended.⁵ Seventeen showers of short duration occurred between 12:00 m. on Oct. 25 to 8:40 a. m. on Oct. 26. Major storm began at 8:45 a. m.

TABLE 82.—Run-off from watershed 111 for selected storms, 1939

[Area 1.18 acres; rainfall measured at recording rain gage 109]

Date and time	Discharge ¹	Accumulated run-off	Date and time	Discharge ¹	Accumulated run-off	Date and time	Discharge ¹	Accumulated run-off
STORM OF OCT. 25-27, TOTAL RAINFALL 4.00 INCHES			STORM OF OCT. 25-27, TOTAL RAINFALL 4.00 INCHES—Continued			STORM OF OCT. 25-27, TOTAL RAINFALL 4.00 INCHES—Continued		
Oct. 26: ¹	Sec.-ft.	In. per hr.	Oct. 27—Con.	Sec.-ft.	In. per hr.	Oct. 27—Con.	Sec.-ft.	In. per hr.
8:36 a. m. ³	0	0	4:59 a. m.	0.346	0.290	9:50 a. m.	0.0200	0.0168
8:42 a. m.	.0014	.0015	5:00 a. m.	.363	.304	9:55 a. m.	.0061	.0051
8:43 a. m.	.0158	.0132	5:02 a. m.	.419	.351	10:00 a. m.	.0018	.0015
8:44 a. m.	.149	.125	5:03 a. m.	.521	.434	10:15 a. m.	0	0
8:45 a. m.	.296	.248	5:05 a. m.	.612	.513	1:38 p. m.	0	0
8:46 a. m.	.328	.275	5:06 a. m.	.636	.533	1:40 p. m.	.0018	.0015
8:47 a. m.	.363	.304	5:08 a. m.	.612	.513	1:41 p. m.	.0061	.0051
8:48 a. m.	.588	.493	5:10 a. m.	.566	.474	1:42 p. m.	.0247	.0207
8:49 a. m.	.661	.554	5:11 a. m.	.479	.401	1:43 p. m.	.0991	.0830
8:50 a. m.	.686	.575	5:12 a. m.	.381	.319	1:44 p. m.	.184	.154
8:52 a. m.	.612	.513	5:13 a. m.	.296	.248	1:45 p. m.	.250	.210
8:53 a. m.	.458	.384	5:15 a. m.	.196	.164	1:46 p. m.	.312	.262
8:54 a. m.	.346	.290	5:17 a. m.	.128	.107	1:50 p. m.	.265	.222
8:55 a. m.	.296	.248	5:18 a. m.	.0904	.0758	1:52 p. m.	.209	.175
8:56 a. m.	.222	.186	5:20 a. m.	.0596	.0499	1:55 p. m.	.128	.107
8:57 a. m.	.172	.144	5:22 a. m.	.0350	.0293	1:57 p. m.	.0904	.0758
8:58 a. m.	.118	.0896	5:25 a. m.	.0200	.0168	2:00 p. m.	.0596	.0499
8:59 a. m.	.0904	.0758	5:27 a. m.	.0121	.0101	2:05 p. m.	.0298	.0250
9:00 a. m.	.0667	.0559	5:30 a. m.	.0038	.0032	2:10 p. m.	.0120	.0101
9:02 a. m.	.0298	.0250	5:33 a. m.	0	0	2:15 p. m.	.0121	.0101
9:04 a. m.	.0089	.0075	9:25 a. m.	0	0	2:20 p. m.	.0089	.0075
9:05 a. m.	.0038	.0032	9:26 a. m.	.0089	.0075	2:30 p. m.	.0061	.0051
9:07 a. m.	0	0	9:27 a. m.	.0247	.0207	2:50 p. m.	.0061	.0051
9:15 a. m. ⁴	0	0	9:28 a. m.	.0667	.0559	3:00 p. m.	.0038	.0032
Oct. 27:			9:29 a. m.	.138	.116	3:20 p. m.	.0038	.0032
4:03 a. m. ³	0	0	9:30 a. m.	.209	.175	3:30 p. m.	.0061	.0051
4:46 a. m.	.0061	.0051	9:31 a. m.	.265	.222	3:35 p. m.	.0089	.0075
4:47 a. m.	.0247	.0207	9:33 a. m.	.312	.262	3:45 p. m.	.0089	.0075
4:48 a. m.	.0596	.0499	9:35 a. m.	.280	.235	4:00 p. m.	.0038	.0032
4:49 a. m.	.0904	.0758	9:37 a. m.	.222	.186	4:30 p. m.	.0018	.0015
4:50 a. m.	.128	.107	9:39 a. m.	.149	.125	4:45 p. m.	.0038	.0032
4:51 a. m.	.184	.154	9:40 a. m.	.128	.107	5:00 p. m.	.0018	.0015
4:52 a. m.	.236	.198	9:42 a. m.	.0904	.0758	5:15 p. m.	.0061	.0051
4:54 a. m.	.312	.262	9:44 a. m.	.0529	.0443	5:30 p. m.	.0038	.0032
4:55 a. m.	.328	.275	9:45 a. m.	.0465	.0390	6:00 p. m. ⁴	.0018	.0015
4:56 a. m.	.346	.290	9:47 a. m.	.0350	.0293	6:30 p. m.	0	0

¹ Observed flow without corrections for base flow.² Showers on Oct. 25 caused no run-off.³ Rain began.⁴ Rain ended.

TABLE 83.—Run-off from watershed 115 for selected storms, 1939

[Area 1.61 acres; rainfall measured at recording rain gage Y103]

Date and time	Discharge ¹	Accumulated run-off	Date and time	Discharge ¹	Accumulated run-off	Date and time	Discharge ¹	Accumulated run-off
STORM OF JUNE 18-19, TOTAL RAINFALL 3.17 INCHES			STORM OF JUNE 18-19, TOTAL RAINFALL 3.17 INCHES—Continued			STORM OF JUNE 18-19, TOTAL RAINFALL 3.17 INCHES—Continued		
June 18:	Sec.-ft.	In. per hr.	June 18—Con.	Sec.-ft.	In. per hr.	June 18—Con.	Sec.-ft.	In. per hr.
8:51 a. m.	0	0	10:37 a. m.	0.0529	0.0326	12:15 p. m.	0.0298	0.0184
8:52 a. m.	.0089	.0055	10:45 a. m.	.0406	.0250	12:18 p. m.	.0298	.0184
8:53 a. m.	.0298	.0184	10:50 a. m.	.0247	.0152	12:19 p. m.	.0465	.0286
8:54 a. m.	.0596	.0367	10:55 a. m.	.0158	.0097	12:20 p. m.	.0667	.0411
8:55 a. m.	.0991	.0610	11:00 a. m.	.0158	.0097	12:21 p. m.	.0991	.0610
8:57 a. m.	.149	.0916	11:02 a. m.	.0200	.0123	12:22 p. m.	.138	.0850
8:58 a. m.	.160	.0985	11:05 a. m.	.0406	.0250	12:23 p. m.	.184	.113
9:00 a. m.	.108	.0666	11:06 a. m.	.0596	.0367	12:24 p. m.	.222	.137
9:02 a. m.	.0742	.0457	11:07 a. m.	.0821	.0506	12:25 p. m.	.280	.172
9:05 a. m.	.0406	.0250	11:08 a. m.	.108	.0666	12:27 p. m.	.312	.224
9:06 a. m.	.0406	.0250	11:09 a. m.	.138	.0856	12:30 p. m.	.458	.282
9:07 a. m.	.0596	.0367	11:10 a. m.	.160	.0985	12:33 p. m.	.400	.246
9:08 a. m.	.0821	.0506	11:11 a. m.	.209	.129	12:35 p. m.	.328	.202
9:09 a. m.	.108	.0666	11:12 a. m.	.265	.154	12:36 p. m.	.280	.172
9:10 a. m.	.108	.0666	11:13 a. m.	.328	.202	12:37 p. m.	.250	.154
9:13 a. m.	.0991	.0610	11:14 a. m.	.400	.246	12:38 p. m.	.222	.137
9:15 a. m.	.0821	.0506	11:15 a. m.	.479	.295	12:39 p. m.	.184	.113
9:17 a. m.	.0596	.0367	11:20 a. m.	.612	.377	12:40 p. m.	.160	.0985
9:20 a. m.	.0350	.0216	11:25 a. m.	.712	.438	12:41 p. m.	.138	.0850
9:22 a. m.	.0247	.0152	11:28 a. m.	.686	.422	12:42 p. m.	.118	.0725
9:25 a. m.	.0158	.0097	11:30 a. m.	.712	.438	12:43 p. m.	.0991	.0610
9:30 a. m.	.0089	.0055	11:33 a. m.	.792	.488	12:44 p. m.	.0821	.0506
9:35 a. m.	.0075	.0030	11:35 a. m.	.764	.471	12:45 p. m.	.0667	.0411
9:40 a. m.	.0075	.0030	11:38 a. m.	.612	.377	12:48 p. m.	.0406	.0250
9:45 a. m.	.0061	.0038	11:40 a. m.	.521	.321	12:50 p. m.	.0298	.0184
9:50 a. m.	.0121	.0074	11:43 a. m.	.400	.246	12:52 p. m.	.0200	.0123
10:00 a. m.	.0121	.0074	11:45 a. m.	.328	.202	12:55 p. m.	.0121	.0074
10:08 a. m.	.0061	.0038	11:48 a. m.	.250	.154	1:00 p. m.	.0061	.0038
10:10 a. m.	.0089	.0055	11:50 a. m.	.209	.129	1:15 p. m.	.0018	.0011
10:20 a. m.	.0061	.0038	11:55 a. m.	.149	.0916	1:30 p. m.	.0018	.0011
10:25 a. m.	.0089	.0055	11:57 a. m.	.118	.0725	1:45 p. m.	.0018	.0011
10:27 a. m.	.0158	.0097	12:00 p. m.	.0904	.0557	2:00 p. m.	.0018	.0011
10:30 a. m.	.0298	.0184	12:05 p. m.	.0529	.0326	2:15 p. m.	0	0
10:35 a. m.	.0465	.0286	12:10 p. m.	.0350	.0216	4:45 p. m.	0	0

¹ Observed flow without corrections for base flow.

TABLE 83.—Run-off from watershed 115 for selected storms, 1939—Continued

STORM OF JUNE 18-19, TOTAL RAINFALL 3.17 INCHES—Continued				STORM OF JUNE 18-19, TOTAL RAINFALL 3.17 INCHES—Continued				STORM OF JULY 8, TOTAL RAINFALL 2.57 INCHES—Continued			
Date and time	Discharge	Accumulated run-off		Date and time	Discharge	Accumulated run-off		Date and time	Discharge	Accumulated run-off	
June 18—Con.				June 19—Con.				July 8—Con.			
5:00 p. m.	0.0018	0.0011	0.3618	2:55 a. m.	0.0038	0.0023	0.6683	8:08 a. m.	1.58	0.973	0.8589
5:15 p. m.	.0018	.0011	.3621	2:58 a. m.	.0089	.0055	.6685	8:09 a. m.	1.38	.850	.8741
5:30 p. m.	.0018	.0011	.3624	3:00 a. m.	.0121	.0074	.6687	8:10 a. m.	1.20	.739	.8871
5:45 p. m.	.0018	.0011	.3627	3:02 a. m.	.0158	.0097	.6690	8:11 a. m.	.998	.615	.8984
6:00 p. m.	.0018	.0011	.3630	3:05 a. m.	.0158	.0097	.6700	8:12 a. m.	.848	.522	.9078
6:15 p. m.	.0018	.0011	.3633	3:10 a. m.	.0121	.0074	.6707	8:14 a. m.	.712	.438	.9238
6:30 p. m.	.0018	.0011	.3636	3:15 a. m.	.0200	.0123	.6715	8:15 a. m.	.612	.377	.9305
6:40 p. m.	.0018	.0011	.3638	3:20 a. m.	.0350	.0184	.6728	8:17 a. m.	.458	.282	.9414
6:45 p. m.	.0061	.0038	.3640	3:22 a. m.	.0529	.0326	.6736	8:20 a. m.	.296	.182	.9530
6:47 p. m.	.0061	.0038	.3641	3:25 a. m.	.0821	.0506	.6757	8:22 a. m.	.209	.129	.9581
6:48 p. m.	.0121	.0074	.3642	3:28 a. m.	.108	.0666	.6786	8:25 a. m.	.128	.0786	.9632
6:49 p. m.	.0350	.0216	.3644	3:30 a. m.	.128	.0786	.6810	8:27 a. m.	.0821	.0506	.9653
6:50 p. m.	.0529	.0326	.3649	3:35 a. m.	.172	.106	.6887	8:30 a. m. ³	.0529	.0326	.9673
6:51 p. m.	.0667	.0411	.3655	3:40 a. m.	.149	.0916	.6973	8:35 a. m.	.0298	.0184	.9694
6:52 p. m.	.0904	.0557	.3663	3:45 a. m.	.0904	.0557	.7034	8:40 a. m.	.0158	.0097	.9705
6:53 p. m.	.108	.0666	.3673	3:50 a. m.	.0529	.0321	.7070	8:45 a. m.	.0089	.0055	.9711
6:54 p. m.	.108	.0666	.3684	3:55 a. m.	.0350	.0216	.7092	8:50 a. m.	.0061	.0038	.9715
6:55 p. m.	.118	.0725	.3696	4:00 a. m.	.0247	.0152	.7107	9:00 a. m.	.0038	.0023	.9720
6:58 p. m.	.138	.0850	.3735	4:20 a. m.	.0158	.0097	.7148	9:30 a. m.	0	0	.9726
7:00 p. m.	.138	.0850	.3764	4:40 a. m.	.0089	.0055	.7173	12:27 p. m. ²	0	0	
7:03 p. m.	.160	.0985	.3810	5:00 a. m.	.0038	.0023	.7186	12:29 p. m.	0	0	
7:05 p. m.	.160	.0985	.3844	6:00 a. m.	.0038	.0023	.7209	12:30 p. m.	.0038	.0023	
7:10 p. m.	.128	.0786	.3917	7:00 a. m.	.0018	.0011	.7226	12:31 p. m.	.0158	.0097	.9727
7:15 p. m.	.118	.0725	.3977	7:30 a. m.	.0018	.0011	.7232	12:32 p. m.	.0529	.0326	.9730
7:20 p. m.	.0904	.0557	.4028	8:00 a. m.	.0061	.0038	.7244	12:33 p. m.	.328	.202	.9749
7:23 p. m.	.0596	.0367	.4051	9:00 a. m.	.0038	.0023	.7274	12:34 p. m.	.848	.522	.9809
7:25 p. m.	.0465	.0286	.4062	10:00 a. m.	.0018	.0011	.7291	12:35 p. m.	1.54	.949	.9931
7:27 p. m.	.0298	.0184	.4070	12:00 m.	0	0	.7301	12:36 p. m.	2.32	1.43	1.0129
7:30 p. m.	.0200	.0123	.4078	STORM OF JULY 8, TOTAL RAINFALL 2.57 INCHES				12:37 p. m.	2.58	1.59	1.0380
7:35 p. m.	.0121	.0074	.4086	July 8:				12:38 p. m.	2.37	1.46	1.0644
7:40 p. m.	.0089	.0055	.4091	5:09 a. m. ²	0	0	0	12:39 p. m.	2.07	1.28	1.0872
7:45 p. m.	.0050	.0030	.4094	5:13 a. m.	.0121	.0074	.0001	12:40 p. m.	1.66	1.02	1.1063
7:50 p. m.	.0038	.0023	.4096	5:14 a. m.	.0596	.0367	.0005	12:41 p. m.	1.23	.758	1.1209
8:00 p. m.	.0038	.0023	.4100	5:15 a. m.	.108	.0666	.0014	12:42 p. m.	1.03	.634	1.1325
8:15 p. m.	.0018	.0011	.4104	5:16 a. m.	.280	.172	.0034	12:43 p. m.	.820	.505	1.1419
8:30 p. m.	.0018	.0011	.4107	5:17 a. m.	.906	.558	.0096	12:44 p. m.	.686	.422	1.1487
8:45 p. m.	.0018	.0011	.4110	5:18 a. m.	1.23	.758	.0207	12:45 p. m.	.543	.334	1.1550
9:00 p. m.	.0018	.0011	.4113	5:19 a. m.	1.75	1.08	.0360	12:46 p. m.	.400	.246	1.1598
9:15 p. m.	.0018	.0011	.4116	5:20 a. m. ³	2.42	1.49	.0574	12:47 p. m.	.312	.192	1.1634
9:30 p. m.	.0018	.0011	.4119	5:21 a. m.	2.80	1.72	.0847	12:48 p. m.	.250	.154	1.1663
9:35 p. m.	.0018	.0011	.4120	5:23 a. m.	2.58	1.59	.1410	12:50 p. m.	.363	.224	1.1726
9:40 p. m.	.0038	.0023	.4121	5:24 a. m.	2.07	1.28	.1648	12:51 p. m.	.764	.471	1.1784
9:43 p. m.	.0038	.0023	.4122	5:25 a. m.	1.66	1.02	.1828	12:52 p. m.	1.42	.875	1.1896
9:45 p. m.	.0121	.0074	.4123	5:26 a. m.	1.23	.758	.1976	12:53 p. m.	1.93	1.19	1.2068
9:50 p. m.	.0121	.0074	.4129	5:27 a. m.	1.03	.634	.2092	12:54 p. m.	2.42	1.49	1.2291
9:55 p. m.	.0121	.0074	.4135	5:28 a. m.	.848	.522	.2188	12:55 p. m.	2.69	1.66	1.2553
10:00 p. m.	.0200	.0123	.4143	5:29 a. m.	.686	.422	.2266	12:56 p. m.	2.80	1.72	1.2835
10:10 p. m.	.0247	.0152	.4166	5:30 a. m.	.566	.349	.2330	12:58 p. m.	2.53	1.56	1.3382
10:15 p. m.	.0247	.0152	.4178	5:31 a. m.	.419	.258	.2380	12:59 p. m.	2.26	1.39	1.3628
10:20 p. m.	.0200	.0123	.4190	5:32 a. m.	.312	.192	.2417	1:00 p. m.	1.93	1.19	1.3843
10:23 p. m.	.0121	.0074	.4195	5:33 a. m.	.250	.154	.2445	1:01 p. m.	1.62	.998	1.4025
10:30 p. m.	.0061	.0038	.4202	5:34 a. m.	.184	.113	.2467	1:02 p. m.	1.42	.875	1.4181
10:40 p. m.	0	0	.4205	5:35 a. m.	.138	.0850	.2492	1:05 p. m.	1.095	.674	1.4568
11:00 p. m.	.0028	.0017	.4208	5:36 a. m.	.108	.0666	.2504	1:07 p. m.	.877	.540	1.4770
11:15 p. m.	.0018	.0011	.4212	5:38 a. m.	.0667	.0411	.2522	1:10 p. m.	.636	.392	1.5003
11:30 p. m.	.0018	.0011	.4215	5:40 a. m.	.0465	.0286	.2534	1:12 p. m.	.479	.295	1.5117
11:40 p. m.	.0028	.0017	.4217	5:42 a. m.	.0298	.0184	.2542	1:15 p. m.	.346	.213	1.5244
11:45 p. m.	.0038	.0023	.4219	5:45 a. m.	.0158	.0097	.2553	1:17 p. m.	.250	.154	1.5304
11:48 p. m.	.0158	.0097	.4222	5:50 a. m.	.0089	.0055	.2560	1:20 p. m.	.172	.106	1.5368
11:52 p. m.	.0121	.0074	.4228	5:55 a. m.	.0038	.0023	.2563	1:22 p. m.	.128	.0786	1.5398
11:55 p. m.	.0298	.0184	.4234	6:00 a. m.	.0018	.0011	.2564	1:25 p. m.	.0821	.0506	1.5430
12:00 p. m.	.0742	.0457	.4260	6:20 a. m.	0	0	.2565	1:30 p. m.	.0465	.0286	1.5463
June 19:				7:37 a. m. ²	0	0		1:35 p. m.	.0350	.0216	1.5483
12:05 a. m.	.108	.0666	.4305	7:39 a. m.	.0089	.0055	.2565	1:40 p. m.	.0158	.0097	1.5499
12:10 a. m.	.0821	.0506	.4352	7:40 a. m.	.0406	.0250	.2567	1:45 p. m.	.0089	.0055	1.5505
12:13 a. m.	.160	.0985	.4389	7:41 a. m.	.209	.129	.2580	1:50 p. m.	.0061	.0038	1.5509
12:15 a. m.	.250	.154	.4432	7:42 a. m.	.419	.258	.2612	2:00 p. m.	.0038	.0023	1.5514
12:17 a. m.	.328	.202	.4492	7:43 a. m.	.612	.377	.2665	2:20 p. m. ³	.0018	.0011	1.5519
12:20 a. m.	.438	.270	.4610	7:44 a. m.	.712	.438	.2728	2:40 p. m.	0	0	
12:25 a. m.	.500	.308	.4841	7:45 a. m.	.848	.522	.2808				
12:30 a. m.	.458	.282	.5087	7:47 a. m.	.936	.576	.2991				
12:31 a. m.	.543	.334	.5139	7:50 a. m.	1.06	.654	.3196	Oct. 25:			
12:33 a. m.	.712	.438	.5269	7:51 a. m.	1.31	.807	.3317	12:20 a. m. ¹	0	0	0
12:35 a. m.	.877	.540	.5429	7:52 a. m.	1.75	1.08	.3473	10:36 p. m.	0	0	0
12:37 a. m.	.906	.558	.5609	7:53 a. m.	2.07	1.28	.3669	10:46 p. m.	0	0	0
12:40 a. m.	.792	.488	.5869	7:54 a. m.	2.69	1.66	.3913	10:47 p. m.	.0089	.0055	.0001
12:45 a. m.	.543	.334	.6209	7:55 a. m.	3.22	1.98	.4216	10:49 p. m.	.0121	.0074	.0003
12:48 a. m.	.381	.235	.6349	7:57 a. m.	3.95	2.43	.4684	10:50 p. m.	.0121	.0074	.0004
12:50 a. m.	.296	.182	.6399	7:58 a. m.	4.46	2.75	.5447	10:55 p. m.	.0038	.0023	.0008
12:52 a. m.	.222	.137	.6449	8:00 a. m.	3.88	2.39	.6303	11:00 p. m.	0	0	.0009
12:55 a. m.	.172	.106	.6509	8:01 a. m.	3.35	2.06	.6674	11:15 p. m. ⁴	0	0	
12:57 a. m.	.138	.0850	.6541	8:02 a. m.	2.86	1.76	.6993				
1:00 a. m.	.0991	.0610	.6577	8:03 a. m.	2.53	1.56	.7269	Oct. 26:			
1:02 a. m.	.0742	.0457	.6595	8:04 a. m.	2.37	1.46	.7520	8:26 a. m. ²	0	0	
1:05 a. m.	.0465	.0286	.6613	8:05 a. m.	2.21	1.36	.7990	8:40 a. m.	.0038	.0023	
1:10 a. m.	.0247	.0152	.6623	8:06 a. m.	2.07	1.28	.8209	8:41 a. m.	.0061	.0038	.0010
1:15 a. m.	.0158	.0097	.6633	8:07 a. m.	1.88	1.16	.8411	8:42 a. m.	.0075	.282	.0034
1:20 a. m.	.0089	.0055	.6639					8:43 a. m.	1.06	.654	.0112
1:30 a. m.	.0061	.0038	.6647					8:44 a. m.	1.58	.973	.0248

² Rain began.³ Rain ended.⁴ Rain ended, from rain gage Y101.

TABLE 83.—Run-off from watershed 115 for selected storms, 1939—Continued

Date and time		Discharge		Accumulated run-off		Date and time		Discharge		Accumulated run-off	
STORM OF OCT. 25-27, TOTAL RAINFALL 4.44 INCHES—Continued						STORM OF OCT. 25-27, TOTAL RAINFALL 4.44 INCHES—Continued					
Oct. 26—Con.	Sec.-ft.	In. per hr.	In.	Oct. 27—Con.	Sec.-ft.	In. per hr.	In.	Oct. 27—Con.	Sec.-ft.	In. per hr.	In.
8:45 a. m.	3.35	2.06	0.0501	4:58 a. m.	0.479	0.295	0.4355	9:37 a. m.	0.209	0.129	0.9757
8:46 a. m.	3.95	2.43	.0875	4:59 a. m.	.738	.455	.4417	9:38 a. m.	.280	.172	.9782
8:47 a. m.	4.31	2.66	.1299	5:00 a. m.	1.03	.634	.4508	9:40 a. m.	.296	.182	.9841
8:48 a. m.	4.17	2.61	.1738	5:01 a. m.	1.20	.739	.4622	9:45 a. m.	.296	.182	.9992
8:49 a. m.	3.75	2.31	.2148	5:03 a. m.	1.38	.850	.4887	9:46 a. m.	.296	.182	1.0022
8:50 a. m.	2.42	1.84	.2493	5:05 a. m.	1.27	.782	.5159	9:50 a. m.	.236	.145	1.0131
8:51 a. m.	2.32	1.43	.2765	5:08 a. m.	1.46	.674	.5523	9:55 a. m.	.184	.113	1.0197
8:52 a. m.	1.70	1.05	.2971	5:10 a. m.	.877	.540	.5725	10:00 a. m.	.160	.0985	1.0285
8:53 a. m.	1.13	.696	.3116	5:12 a. m.	.764	.471	.5893	10:15 a. m.	.128	.0786	1.0506
8:54 a. m.	.764	.471	.3213	5:15 a. m.	.661	.407	.6112	10:30 a. m. ³	.118	.0725	1.0692
8:55 a. m.	.588	.362	.3283	5:20 a. m.	.543	.334	.6421	11:00 a. m.	.108	.0666	1.1039
8:57 a. m.	.458	.282	.3390	5:25 a. m.	.458	.282	.6678	11:10 a. m.	.0991	.0610	1.1145
9:00 a. m.	.346	.213	.3514	5:30 a. m.	.381	.235	.6893	11:20 a. m.	.0904	.0557	1.1242
9:05 a. m.	.250	.154	.3671	5:35 a. m.	.346	.213	.7080	11:30 a. m.	.0742	.0457	1.1326
9:10 a. m.	.184	.113	.3782	5:40 a. m.	.312	.192	.7249	11:45 a. m.	.0596	.0367	1.1429
9:15 a. m.	.138	.0850	.3864	5:50 a. m.	.250	.154	.7537	12:00 m.	.0406	.0250	1.1506
9:20 a. m.	.108	.0666	.3927	6:00 a. m.	.196	.121	.7766	12:30 p. m.	.0200	.0123	1.1599
9:25 a. m.	.0821	.0506	.3976	6:15 a. m.	.149	.0916	.8031	1:00 p. m.	.0121	.0074	1.1648
9:30 a. m.	.0667	.0411	.4014	6:30 a. m.	.108	.0666	.8229	1:20 p. m. ²	.0089	.0055	1.1669
9:40 a. m.	.0529	.0326	.4075	6:45 a. m.	.0821	.0506	.8376	1:40 p. m.	.0158	.0097	1.1694
9:50 a. m.	.0406	.0250	.4123	7:00 a. m.	.0667	.0411	.8789	1:45 p. m.	.0247	.0152	1.1704
10:00 a. m.	.0298	.0184	.4159	7:30 a. m.	.0406	.0250	.8954	1:50 p. m.	.0350	.0216	1.1719
10:20 a. m.	.0200	.0123	.4210	8:00 a. m.	.0350	.0216	.9070	2:00 p. m.	.0465	.0286	1.1761
10:40 a. m.	.0121	.0074	.4242	8:10 a. m.	.0465	.0286	.9112	2:30 p. m.	.0529	.0326	1.1914
11:00 a. m.	.0089	.0055	.4263	8:20 a. m.	.0596	.0367	.9166	3:00 p. m.	.0529	.0326	1.2077
11:30 a. m.	.0038	.0023	.4282	8:30 a. m.	.0742	.0457	.9235	3:30 p. m.	.0406	.0250	1.2221
12:00 a. m. ³	0	0	.4288	8:40 a. m.	.0821	.0506	.9315	4:00 p. m.	.0465	.0286	1.2352
Oct. 27:				9:00 a. m.	.0821	.0506	.9450	4:30 p. m.	.0406	.0250	1.2483
4:04 a. m. ¹	0	0		9:20 a. m.	.0742	.0457	.9611	5:00 p. m.	.0298	.0184	1.2591
4:53 a. m.	0	0		9:25 a. m.	.0742	.0457	.9649	5:20 p. m. ³	.0247	.0152	1.2647
4:54 a. m.	.0061	.0038	.4288	9:29 a. m.	.0742	.0457	.9679	6:00 p. m.	.0200	.0123	1.2738
4:55 a. m.	.0298	.0184	.4290	9:30 a. m.	.0821	.0506	.9687	7:00 p. m.	.0121	.0074	1.2836
4:56 a. m.	.118	.0725	.4297	9:35 a. m.	.0904	.0557	.9731	8:00 p. m.	.0061	.0038	1.2892
4:57 a. m.	.265	.163	.4317	9:36 a. m.	.108	.0666	.9741	9:00 p. m.	0	0	1.2911

¹ Rain began.³ Rain ended, from rain gage Y101.

TABLE 84.—Run-off from watershed 121 for selected storms, 1939

[Area 1.42 acres; rainfall measured at recording rain gage 113]

Date and time		Discharge ¹		Accumulated run-off	Date and time		Discharge ¹		Accumulated run-off	Date and time		Discharge ¹		Accumulated run-off
STORM OF JUNE 18-19, TOTAL RAINFALL 2.94 INCHES					STORM OF JUNE 18-19, TOTAL RAINFALL 2.94 INCHES—Continued					STORM OF JUNE 18-19, TOTAL RAINFALL 2.94 INCHES—Continued				
June 18:		Sec.-ft.	In. per hr.	In.	June 18—Con.		Sec.-ft.	In. per hr.	In.	June 18—Con.		Sec.-ft.	In. per hr.	In.
8:45 a. m.	0		0	0	11:07 a. m.	1.20	0.838	0.1008		1:00 p. m.	0.0089	0.0062	0.4395	
9:00 a. m.	.0018	.0012	.0001		11:09 a. m.	1.42	.991	.1313		1:15 p. m.	.0061	.0043	.4408	
9:03 a. m.	.0061	.0043	.0002		11:10 a. m.	1.16	.810	.1463		1:30 p. m.	.0038	.0026	.4416	
9:04 a. m.	.0821	.0573	.0007		11:11 a. m.	.967	.675	.1587		2:00 p. m.	.0038	.0026	.4429	
9:05 a. m.	.108	.0755	.0018		11:12 a. m.	.764	.533	.1687		3:00 p. m.	.0018	.0012	.4448	
9:07 a. m.	.0667	.0466	.0038		11:14 a. m.	.566	.395	.1842		6:00 p. m.	.0018	.0012	.4484	
9:08 a. m.	.0465	.0324	.0044		11:15 a. m.	.521	.364	.1905		6:30 p. m.	.0018	.0012	.4490	
9:10 a. m.	.0200	.0140	.0051		11:18 a. m.	.438	.306	.2073		6:35 p. m.	.0018	.0012	.4491	
9:12 a. m.	.0121	.0084	.0054		11:20 a. m.	.346	.242	.2164		6:40 p. m.	.0038	.0026	.4492	
9:15 a. m.	.0089	.0062	.0058		11:22 a. m.	.312	.218	.2241		6:45 p. m.	.0061	.0043	.4495	
9:30 a. m.	.0061	.0043	.0071		11:24 a. m.	.419	.292	.2326		6:49 p. m.	.0061	.0043	.4498	
9:40 a. m.	.0061	.0043	.0078		11:25 a. m.	.500	.349	.2376		6:50 p. m.	.0596	.0416	.4502	
9:42 a. m.	.0121	.0084	.0080		11:27 a. m.	.566	.395	.2500		6:52 p. m.	.0991	.0692	.4520	
9:45 a. m.	.0200	.0140	.0085		11:30 a. m.	.458	.320	.2679		6:53 p. m.	.118	.0822	.4532	
9:55 a. m.	.0121	.0084	.0103		11:33 a. m.	.363	.253	.2822		6:55 p. m.	.0904	.0631	.4556	
10:00 a. m.	.0121	.0084	.0110		11:35 a. m.	.346	.242	.2904		6:58 p. m.	.0742	.0518	.4584	
10:15 a. m.	.0089	.0062	.0128		11:40 a. m.	.296	.207	.3097		6:59 p. m.	.118	.0822	.4595	
10:25 a. m.	.0089	.0062	.0138		11:45 a. m.	.250	.174	.3250		7:00 p. m.	.138	.0963	.4610	
10:27 a. m.	.0089	.0062	.0140		11:50 a. m.	.172	.120	.3373		7:03 p. m.	.0991	.0692	.4651	
10:28 a. m.	.0406	.0283	.0143		11:55 a. m.	.118	.0822	.3457		7:05 p. m.	.0667	.0466	.4670	
10:30 a. m.	.0529	.0369	.0154		12:00 m.	.0904	.0631	.3517		7:07 p. m.	.0465	.0234	.4682	
10:35 a. m.	.0406	.0283	.0181		12:10 p. m.	.0667	.0466	.3608		7:10 p. m.	.0350	.0244	.4694	
10:40 a. m.	.0904	.0631	.0219		12:13 p. m.	.0742	.0518	.3632		7:15 p. m.	.0350	.0244	.4714	
10:45 a. m.	.0200	.0140	.0251		12:15 p. m.	.108	.0755	.3653		7:20 p. m.	.0298	.0208	.4734	
10:48 a. m.	.0247	.0172	.0259		12:16 p. m.	.160	.112	.3669		7:25 p. m.	.0200	.0140	.4748	
10:49 a. m.	.0298	.0208	.0262		12:17 p. m.	.222	.155	.3691		7:30 p. m.	.0158	.0110	.4758	
10:50 a. m.	.0742	.0518	.0268		12:18 p. m.	.280	.195	.3712		7:32 p. m.	.0298	.0208	.4763	
10:51 a. m.	.128	.0891	.0280		12:20 p. m.	.328	.229	.3783		7:35 p. m.	.0247	.0172	.4772	
10:53 a. m.	.196	.137	.0317		12:23 p. m.	.363	.253	.3903		7:40 p. m.	.0200	.0140	.4785	
10:55 a. m.	.196	.137	.0362		12:25 p. m.	.296	.207	.3980		7:45 p. m.	.0158	.0110	.4795	
10:58 a. m.	.196	.137	.0430		12:30 p. m.	.222	.155	.4131		8:00 p. m.	.0121	.0084	.4819	
10:59 a. m.	.265	.185	.0448		12:33 p. m.	.172	.120	.4200		9:00 p. m.	.0061	.0043	.4882	
11:00 a. m.	.328	.229	.0482		12:35 p. m.	.138	.0963	.4236		9:30 p. m.	.0061	.0043	.4903	
11:01 a. m.	.400	.279	.0524		12:40 p. m.	.0991	.0692	.4305		9:35 p. m.	.0089	.0062	.4907	
11:04 a. m.	.566	.395	.0692		12:45 p. m.	.0596	.0416	.4351		9:40 p. m.	.0089	.0062	.4912	
11:05 a. m.	.820	.572	.0772		12:50 p. m.	.0298	.0208	.4375		10:00 p. m.	.0089	.0062	.4933	
11:06 a. m.	1.03	.719	.0879		12:55 p. m.	.0158	.0110	.4388		11:00 p. m.	.0089	.0062	.4995	

¹ Observed flow without corrections for base flow.

TABLE 84.—Run-off from watershed 121 for selected storms, 1939—Continued

Date and time		Discharge		Accumu- lated run-off	Date and time		Discharge		Accumu- lated run-off	Date and time		Discharge		Accumu- lated run-off
STORM OF JUNE 18-19, TOTAL RAINFALL 2.94 INCHES—Continued					STORM OF JUNE 18-19, TOTAL RAINFALL 2.94 INCHES—Continued					STORM OF JUNE 18-19, TOTAL RAINFALL 2.94 INCHES—Continued				
June 18—Con.		Sec.-ft.	In. per hr.	In.	June 19—Con.		Sec.-ft.	In. per hr.	In.	June 19—Con.		Sec.-ft.	In. per hr.	In.
11:30 p. m.-----		0.0089	0.0062	0.5026	12:27 a. m.-----		0.438	0.306	0.5783	3:00 a. m.-----		0.0061	0.0043	0.6446
11:50 p. m.-----		.0089	.0062	.5047	12:29 a. m.-----		.346	.242	.5873	3:02 a. m.-----		.0121	.0084	.6448
11:53 p. m.-----		.0121	.0084	.5050	12:30 a. m.-----		.296	.207	.5910	3:05 a. m.-----		.0247	.0172	.6454
11:54 p. m.-----		.0298	.0208	.5052	12:32 a. m.-----		.222	.155	.5970	3:07 a. m.-----		.0350	.0244	.6461
11:55 p. m.-----		.0529	.0369	.5057	12:34 a. m.-----		.196	.137	.6018	3:10 a. m.-----		.0529	.0369	.6476
11:57 p. m.-----		.0596	.0416	.5070	12:35 a. m.-----		.209	.146	.6042	3:12 a. m.-----		.0667	.0466	.6490
12:00 p. m.-----		.0406	.0283	.5087	12:38 a. m.-----		.222	.155	.6117	3:15 a. m.-----		.0904	.0631	.6517
June 19:					12:40 a. m.-----		.196	.137	.6165	3:16 a. m.-----		.0991	.0692	.6528
12:04 a. m.-----		.0350	.0244	.5104	12:42 a. m.-----		.149	.131	.6209	3:20 a. m.-----		.108	.0755	.6576
12:05 a. m.-----		.0667	.0466	.5110	12:44 a. m.-----		.0991	.0692	.6243	3:23 a. m.-----		.118	.0822	.6615
12:07 a. m.-----		.128	.0891	.5132	12:45 a. m.-----		.0821	.0573	.6254	3:25 a. m.-----		.108	.0755	.6641
12:08 a. m.-----		.172	.120	.5150	12:47 a. m.-----		.0742	.0518	.6272	3:27 a. m.-----		.0991	.0692	.6665
12:10 a. m.-----		.196	.137	.5193	12:50 a. m.-----		.0904	.0631	.6301	3:30 a. m.-----		.0821	.0573	.6696
12:11 a. m.-----		.209	.146	.5216	12:55 a. m.-----		.0667	.0466	.6347	3:35 a. m.-----		.0529	.0369	.6735
12:14 a. m.-----		.209	.146	.5289	1:00 a. m.-----		.0465	.0324	.6380	3:45 a. m.-----		.0350	.0244	.6786
12:15 a. m.-----		.250	.174	.5316	1:05 a. m.-----		.0350	.0244	.6404	4:00 a. m.-----		.0247	.0172	.6838
12:18 a. m.-----		.222	.155	.5398	1:10 a. m.-----		.0200	.0140	.6420	4:10 a. m.-----		.0158	.0110	.6861
12:20 a. m.-----		.250	.174	.5453	1:20 a. m.-----		.0089	.0062	.6437	4:20 a. m.-----		.0089	.0062	.6875
12:22 a. m.-----		.328	.229	.5520	1:30 a. m.-----		.0018	.0012	.6443	4:30 a. m.-----		.0038	.0026	.6882
12:24 a. m.-----		.500	.349	.5616	1:40 a. m.-----		0	0	.6444	4:45 a. m.-----		0	0	.6885
12:25 a. m.-----		.500	.349	.5674	2:55 a. m.-----		0	0	.6444					

TABLE 85.—Run-off from watershed 123 for selected storms, 1939

[Area 1.37 acres; rainfall measured at recording rain gage Y103]

Date and time		Discharge ¹		Accumulated run-off	Date and time		Discharge ¹		Accumulated run-off	Date and time		Discharge ¹		Accumulated run-off
STORM OF JUNE 18-19, TOTAL RAINFALL 3.17 INCHES					STORM OF JUNE 18-19, TOTAL RAINFALL 3.17 INCHES—Continued					STORM OF JULY 8, TOTAL RAINFALL 2.57 INCHES—Continued				
June 18:		Sec.-ft.	In. per hr.	In.	June 19—Con.		Sec.-ft.	In. per hr.	In.	July 8—Con.		Sec.-ft.	In. per hr.	In.
9:00 a. m.-----		0	0	0	12:32 a. m.-----		0.0350	0.0253	0.0195	7:45 a. m.-----		0.0529	0.0383	0.0117
9:05 a. m.-----		.0018	.0013	0	12:35 a. m.-----		.0247	.0179	.0205	7:48 a. m.-----		.0350	.0253	.0132
9:10 a. m.-----		.0018	.0013	.0001	12:39 a. m.-----		.0158	.0114	.0215	7:49 a. m.-----		.0465	.0337	.0137
9:15 a. m.-----		0	0		12:43 a. m.-----		.0121	.0088	.0221	7:50 a. m.-----		.0667	.0483	.0144
10:20 a. m.-----		0	0		12:45 a. m.-----		.0089	.0064	.0223	7:51 a. m.-----		.108	.0783	.0154
10:30 a. m.-----		.0028	.0020		12:50 a. m.-----		.0061	.0044	.0227	7:52 a. m.-----		.149	.108	.0169
10:50 a. m.-----		0	0		1:00 a. m.-----		.0018	.0013	.0232	7:53 a. m.-----		.172	.124	.0188
11:00 a. m.-----		.0018	.0013	.0002	1:30 a. m.-----		0	0	.0235	7:54 a. m.-----		.222	.161	.0211
11:05 a. m.-----		.0061	.0044	.0004	3:00 a. m.-----		0	0		7:55 a. m.-----		.521	.377	.0255
11:10 a. m.-----		.0121	.0088	.0009	3:10 a. m.-----		.0018	.0013	.0236	7:56 a. m.-----		.998	.723	.0347
11:14 a. m.-----		.0224	.0162	.0017	3:20 a. m.-----		.0061	.0044	.0241	7:57 a. m.-----		1.42	1.03	.0476
11:15 a. m.-----		.0224	.0162	.0019	3:30 a. m.-----		.0089	.0064	.0250	7:59 a. m.-----		1.58	1.14	.0836
11:18 a. m.-----		.0200	.0145	.0026	3:35 a. m.-----		.0089	.0064	.0255	8:00 a. m.-----		1.54	1.12	.1026
11:20 a. m.-----		.0224	.0162	.0031	3:45 a. m.-----		.0061	.0044	.0264	8:02 a. m.-----		1.23	.890	.1356
11:25 a. m.-----		.0247	.0179	.0045	4:00 a. m.-----		.0061	.0044	.0275	8:05 a. m.-----		1.06	.769	.1770
11:28 a. m.-----		.0247	.0179	.0053	4:05 a. m.-----		.0089	.0064	.0279	8:08 a. m.-----		.877	.635	.2121
11:30 a. m.-----		.0324	.0234	.0059	4:15 a. m.-----		.0089	.0064	.0289	8:10 a. m.-----		.738	.534	.2242
11:35 a. m.-----		.0200	.0145	.0074	4:45 a. m.-----		.0089	.0064	.0321	8:12 a. m.-----		.566	.410	.2399
11:40 a. m.-----		.0121	.0088	.0083	5:00 a. m.-----		.0061	.0044	.0338	8:14 a. m.-----		.458	.332	.2522
11:45 a. m.-----		.0075	.0054	.0089	6:00 a. m.-----		.0018	.0013	.0366	8:15 a. m.-----		.400	.290	.2576
11:50 a. m.-----		.0061	.0044	.0093	7:00 a. m.-----		0	0	.0372	8:17 a. m. ³		.296	.214	.2659
12:00 m.-----		.0018	.0013	.0097	7:30 a. m.-----		0	0	.0372	8:20 a. m.-----		.209	.151	.2749
12:10 p. m.-----		0	0	.0098	8:00 a. m.-----		.0038	.0028	.0379	8:22 a. m.-----		.160	.116	.2815
12:15 p. m.-----		.0018	.0013	.0098	8:30 a. m.-----		.0038	.0028	.0393	8:25 a. m.-----		.118	.0852	.2865
12:18 p. m.-----		.0038	.0028	.0099	9:00 a. m.-----		.0018	.0013	.0403	8:27 a. m.-----		.0904	.0654	.2890
12:20 p. m.-----		.0121	.0088	.0101	10:00 a. m.-----		0	0	.0409	8:30 a. m.-----		.0667	.0483	.2918
12:22 p. m.-----		.0158	.0114	.0104	STORM OF JULY 8, TOTAL RAINFALL 2.57 INCHES									
12:25 p. m.-----		.0158	.0114	.0109										
12:27 p. m.-----		.0179	.0129	.0113										
12:30 p. m.-----		.0121	.0088	.0118										
12:35 p. m.-----		.0038	.0028	.0123										
12:40 p. m.-----		.0018	.0013	.0125										
12:50 p. m.-----		0	0	.0126										
6:50 p. m.-----		0	0	.0126										
6:55 p. m.-----		.0061	.0044	.0128										
7:00 p. m.-----		.0038	.0028	.0131										
7:15 p. m.-----		.0038	.0028	.0138										
7:20 p. m.-----		0	0											
11:50 p. m.-----		0	0	.0138										
12:00 p. m.-----		.0018	.0013	.0139										
June 19:														
12:05 a. m.-----		.0018	.0013	.0140	July 8:					10:00 a. m.-----		0	0	
12:08 a. m.-----		.0018	.0013		5:09 a. m. ² -----		0	0	0	12:27 p. m. ² -----		0	0	
12:10 a. m.-----		.0038	.0028		5:16 a. m.-----		.0018	.0013	.0001	12:33 p. m.-----		.0018	.0013	.3023
12:12 a. m.-----		.0089	.0064	.0141	5:17 a. m.-----		.0247	.0179	.0005	12:34 p. m.-----		.0247	.0179	.3024
12:15 a. m.-----		.0200	.0145	.0146	5:18 a. m.-----		.0529	.0383	.0013	12:35 p. m.-----		.0742	.0537	.3030
12:19 a. m.-----		.0298	.0216	.0158	5:19 a. m.-----		.0742	.0537	.0013	12:36 p. m.-----		.160	.0758	.3040
12:20 a. m.-----		.0298	.0216	.0161	5:20 a. m. ³ -----		.0991	.0717	.0023	12:37 p. m.-----		.160	.0758	.3052
12:25 a. m.-----		.0158	.0114	.0175	5:22 a. m.-----		.138	.0999	.0051	12:38 p. m.-----		.149	.108	.3067
12:27 a. m.-----		.0121	.0088	.0178	5:23 a. m.-----		.0991	.0717	.0063	12:39 p. m.-----		.172	.124	.3086
12:28 a. m.-----		.0247	.0179	.0180	5:24 a. m.-----		.0667	.0483	.0073	12:40 p. m.-----		.236	.171	.3110
12:30 a. m.-----		.0350	.0253	.0187	5:25 a. m.-----		.0529	.0383	.0080	12:41 p. m.-----		.328	.238	.3144
					5:27 a. m.-----		.0200	.0145	.0088	12:42 p. m.-----		.363	.263	.3185
					5:29 a. m.-----		.0061	.0044	.0091	12:43 p. m.-----		.381	.276	.3230
					5:30 a. m.-----		.0038	.0028	.0092	12:45 p. m.-----		.328	.238	.3315
					5:40 a. m.-----		0	0	.0094	12:47 p. m.-----		.250	.181	.3384
					7:37 a. m. ¹ -----		0	0		12:50 p. m.-----		.196	.142	.3464
					7:38 a. m.-----		0	0		12:51 p. m.-----		.236	.171	.3490
					7:40 a. m.-----		.0038	.0028		12:52 p. m.-----		.296	.214	.3522
					7:41 a. m.-----		.0200	.0145	.0095	12:53 p. m.-----		.479	.347	.3568
					7:42 a. m.-----		.0406	.0294	.0098					

¹ Observed flow without corrections for base flow.² Rain began.³ Rain ended.

TABLE 85.—Run-off from watershed 123 for selected storms, 1939—Continued

Date and time		Discharge		Accumulated run-off	Date and time		Discharge		Accumulated run-off	Date and time		Discharge		Accumulated run-off	
STORM OF JULY 8, TOTAL RAINFALL 2.57 INCHES—Continued					STORM OF OCT. 25-27, TOTAL RAINFALL 4.44 INCHES—Continued					STORM OF OCT. 25-27, TOTAL RAINFALL 4.44 INCHES—Continued					
July 8—Con.		Sec.-ft.	In. per hr.	In.	Oct. 26—Con.		Sec.-ft.	In. per hr.	In.	Oct. 27—Con.		Sec.-ft.	In. per hr.	In.	
12:54 p. m.	0.612	0.443	0.3700	8:42 a. m.	0.820	0.594	0.0185	5:14 a. m.	0.346	0.250	0.2927				
12:55 p. m.	.820	.594	.3786	8:43 a. m.	1.16	.840	.0304	5:15 a. m.	.280	.203	.2973				
12:56 p. m.	1.16	.840	.3985	8:44 a. m.	1.58	1.14	.0469	5:17 a. m.	.184	.133	.3029				
12:57 p. m.	1.42	1.03	.4141	8:45 a. m.	1.93	1.40	.0680	5:20 a. m.	.108	.0783	.3081				
12:58 p. m.	1.46	1.06	.4318	8:46 a. m.	2.07	1.50	.0921	5:22 a. m.	.0667	.0483	.3103				
1:00 p. m.	1.34	.970	.4656	8:47 a. m.	1.66	1.20	.1146	5:25 a. m.	.0406	.0294	.3122				
1:02 p. m.	1.16	.840	.4956	8:48 a. m.	.967	.700	.1304	5:27 a. m.	.0247	.0179	.3129				
1:05 p. m.	.936	.678	.5335	8:49 a. m.	.792	.573	.1411	5:30 a. m.	.0158	.0114	.3136				
1:07 p. m.	.792	.574	.5539	8:50 a. m.	.686	.497	.1500	5:45 a. m.	.0089	.0064	.3180				
1:10 p. m.	.661	.479	.5802	8:51 a. m.	.543	.393	.1574	6:00 a. m.	.0018	.0013	.3189				
1:12 p. m.	.543	.393	.5947	8:52 a. m.	.438	.290	.1631	6:10 a. m.	0	0	.3189				
1:15 p. m.	.419	.303	.6121	8:54 a. m.	.280	.203	.1713	9:25 a. m.	0	0	.3189				
1:17 p. m.	.328	.238	.7021	8:55 a. m.	.209	.151	.1742	9:27 a. m.	.0038	.0028	.3189				
1:20 p. m.	.265	.192	.7128	8:56 a. m.	.138	.0999	.1803	9:30 a. m.	.0121	.0088	.3192				
1:22 p. m.	.222	.161	.7186	8:58 a. m.	.0742	.0537	.1828	9:32 a. m.	.0298	.0216	.3197				
1:25 p. m.	.172	.133	.7259	9:00 a. m.	.0465	.0337	.1842	9:33 a. m.	.0529	.0383	.3202				
1:30 p. m.	.118	.0852	.7349	9:02 a. m.	.0298	.0216	.1851	9:34 a. m.	.0904	.0654	.3210				
1:35 p. m.	.0821	.0594	.7109	9:05 a. m.	.0200	.0145	.1860	9:35 a. m.	.128	.0924	.3223				
1:40 p. m.	.0596	.0432	.7152	9:10 a. m.	.0121	.0088	.1869	9:37 a. m.	.209	.151	.3263				
1:45 p. m.	.0465	.0337	.7184	9:15 a. m.	.0089	.0064	.1875	9:39 a. m.	.250	.181	.3318				
1:50 p. m.	.0350	.0253	.7208	9:30 a. m.	.0061	.0044	.1888	9:40 a. m.	.236	.171	.3347				
2:00 p. m.	.0298	.0216	.7247	10:00 a. m.	.0018	.0013	.1902	9:41 a. m.	.196	.142	.3373				
2:15 p. m. ³	.0200	.0145	.7292	10:30 a. m.	0	0	.1905	9:43 a. m.	.118	.0852	.3410				
2:30 p. m.	.0121	.0088	.7321	11:00 a. m. ³	0	0		9:45 a. m.	.0667	.0483	.3432				
3:00 p. m.	.0061	.0044	.7354	Oct. 27:				9:47 a. m.	.0298	.0216	.3443				
3:30 p. m.	.0038	.0028	.7372	4:04 a. m. ²	0	0		9:48 a. m.	.0247	.0179	.3446				
4:00 p. m.	T	T	.7779	4:15 a. m.	.0038	.0028	.1906	9:50 a. m.	.0247	.0179	.3452				
4:30 p. m.	0	0		4:20 a. m.	.0089	.0064	.1910	10:00 a. m.	.0200	.0145	.3579				
STORM OF OCT. 25-27, TOTAL RAINFALL 4.44 INCHES					4:40 a. m.	.0061	.0044	.1928	10:30 a. m. ³	.0121	.0088	.3637			
Oct. 26: ⁴				4:45 a. m.	.0089	.0064	.1932	11:00 a. m.	.0038	.0028	.3666				
8:26 a. m. ²	0	0	0	4:47 a. m.	.0200	.0145	.1935	11:30 a. m.	0	0					
8:36 a. m.	T	T	0	4:49 a. m.	.0298	.0253	.1941	1:20 p. m. ²	0	0					
8:37 a. m.	.0247	.0179	.0001	4:50 a. m.	.0529	.0383	.1946	1:39 p. m.	0	0					
8:38 a. m.	.128	.0924	.0010	4:52 a. m.	.0991	.0717	.1961	1:40 p. m.	.0298	.0216	.3667				
8:39 a. m.	.184	.133	.0028	4:55 a. m.	.138	.0999	.2018	1:41 p. m.	.0465	.0337	.3671				
8:40 a. m.	.280	.203	.0056	4:57 a. m.	.236	.171	.2063	1:43 p. m.	.0350	.0253	.3680				
8:41 a. m.	.521	.377	.0104	5:00 a. m.	.312	.226	.2162	1:45 p. m.	.0247	.0179	.3687				
				5:02 a. m.	.363	.263	.2243	1:48 p. m.	.0089	.0064	.3693				
				5:05 a. m.	.500	.362	.2399	1:50 p. m.	.0038	.0028	.3694				
				5:07 a. m.	.543	.393	.2525	1:55 p. m. ³	.0018	.0013	.3695				
				5:10 a. m.	.521	.377	.2717	2:00 p. m.	T	T					
				5:12 a. m.	.438	.317	.2833	2:10 p. m.	0	0					

¹ Rain began, showers on Oct. 25 caused no run-off.² Rain ended.⁴ Showers Oct. 25; no run-off.

TABLE 86.—Run-off from watershed 124 for selected storms, 1939

[Area 2.07 acres; rainfall measured at recording rain gage 110]

Date and time		Discharge ¹		Accumulated run-off	Date and time		Discharge ¹		Accumulated run-off	Date and time		Discharge ¹		Accumulated run-off
STORM OF OCT. 25-27, TOTAL RAINFALL 3.76 INCHES					STORM OF OCT. 25-27, TOTAL RAINFALL 3.76 INCHES—Continued					STORM OF OCT. 25-27, TOTAL RAINFALL 3.76 INCHES—Continued				
Oct. 26:		Sec.-ft.	In. per hr.	In.	Oct. 27—Con.		Sec.-ft.	In. per hr.	In.	Oct. 27—Con.		Sec.-ft.	In. per hr.	In.
8:44 a. m. ² -----		0	0	0	4:52 a. m.-----		0.0406	0.0194	0.0328	9:32 a. m.-----		0.0200	0.0096	0.0962
8:45 a. m.-----		.0089	.0043	.0001	4:54 a. m.-----		.0667	.0319	.0336	9:35 a. m.-----		.0406	.0194	.0969
8:46 a. m.-----		.0298	.0143	.0001	4:55 a. m.-----		.0821	.0393	.0342	9:37 a. m.-----		.0529	.0253	.0976
8:47 a. m.-----		.0991	.0475	.0006	4:58 a. m.-----		.0991	.0475	.0364	9:40 a. m.-----		.0667	.0319	.0990
8:48 a. m.-----		.209	.100	.0018	5:00 a. m.-----		.128	.0611	.0382	9:42 a. m.-----		.0742	.0355	.1001
8:49 a. m.-----		.280	.134	.0037	5:02 a. m.-----		.160	.0766	.0405	9:45 a. m.-----		.0742	.0355	.1018
8:50 a. m.-----		.328	.157	.0061	5:04 a. m.-----		.236	.113	.0436	9:47 a. m.-----		.0742	.0355	.1030
8:51 a. m.-----		.346	.166	.0088	5:05 a. m.-----		.280	.134	.0457	9:50 a. m.-----		.0596	.0285	.1046
8:53 a. m.-----		.296	.142	.0139	5:08 a. m.-----		.328	.157	.0530	10:00 a. m.-----		.0350	.0168	.1082
8:55 a. m.-----		.236	.113	.0181	5:10 a. m.-----		.346	.166	.0584	10:10 a. m.-----		.0200	.0096	.1104
8:57 a. m.-----		.196	.0939	.0215	5:15 a. m.-----		.296	.142	.0712	10:20 a. m.-----		.0121	.0058	.1116
9:00 a. m.-----		.138	.0661	.0255	5:20 a. m.-----		.196	.0939	.0810	10:30 a. m.-----		.0061	.0029	.1123
9:02 a. m.-----		.108	.0518	.0274	5:22 a. m.-----		.172	.0821	.0839	10:45 a. m.-----		.0018	.0009	.1128
9:05 a. m.-----		.0667	.0319	.0295	5:25 a. m.-----		.118	.0564	.0873	10:50 a. m.-----		0	0	
9:07 a. m.-----		.0318	.0223	.0304	5:30 a. m.-----		.0742	.0355	.0911	1:56 p. m.-----		0	0	
9:10 a. m.-----		.0247	.0118	.0313	5:35 a. m.-----		.0406	.0194	.0934	2:00 p. m.-----		.0061	.0029	.1129
9:15 a. m.-----		.0089	.0043	.0319	5:40 a. m.-----		.0247	.0118	.0947	2:05 p. m.-----		.0061	.0029	.1131
9:20 a. m.-----		.0018	.0009	.0321	5:45 a. m.-----		.0121	.0058	.0954	2:15 p. m.-----		.0061	.0029	.1136
9:30 a. m.-----		0	0	.0322	5:50 a. m.-----		.0061	.0029	.0958	2:30 p. m.-----		.0038	.0018	.1142
Oct. 27:					6:00 a. m.-----		0	0	.0960	3:00 p. m.-----		.0018	.0009	.1148
4:48 a. m.-----		0	0	.0322	9:29 a. m.-----		0	0	.0960	3:10 p. m.-----		0	0	.1149
4:49 a. m.-----		.0158	.0076	.0322	9:30 a. m.-----		.0038	.0018	.0960	5:10 p. m. ³ -----		0	0	.1149
4:50 a. m.-----		.0247	.0118	.0323										

¹ Observed flow without corrections for base flow.² Rain began, showers on Oct. 25 caused no run-off.³ Rain ended.

TABLE 87.—Run-off from watershed 128 for selected storms, 1939

[Area 2.21 acres; rainfall measured at recording rain gage 115]

Date and time		Discharge ¹		Accumulated run-off	Date and time		Discharge ¹		Accumulated run-off	Date and time		Discharge ¹		Accumulated run-off	
STORM OF JULY 8, TOTAL RAINFALL 1.76 INCHES					STORM OF JULY 8, TOTAL RAINFALL 1.76 INCHES—Continued					STORM OF JULY 8, TOTAL RAINFALL 1.76 INCHES—Continued					
July 8:					July 8—Con.					July 8—Con.					
	Sec.-ft.	In. per hr.	In.		Sec.-ft.	In. per hr.	In.		Sec.-ft.	In. per hr.	In.		Sec.-ft.	In. per hr.	In.
5:14 a. m. ²	0	0	0	8:03 a. m.	4.39	1.97	0.3790	12:39 p. m.	0.805	0.361	0.7518	12:39 p. m.	0.805	0.361	0.7518
5:16 a. m.	.103	.0464	0	8:04 a. m.	3.29	1.48	.4078	12:40 p. m.	.550	.247	.7569	12:40 p. m.	.550	.247	.7569
5:17 a. m.	.833	.374	.0035	8:05 a. m.	2.47	1.11	.4293	12:42 p. m.	.347	.156	.7636	12:42 p. m.	.347	.156	.7636
5:18 a. m.	2.76	1.01	.0151	8:06 a. m.	1.83	.822	.4454	12:45 p. m.	.296	.133	.7708	12:45 p. m.	.296	.133	.7708
5:19 a. m.	3.10	1.39	.0351	8:07 a. m.	1.26	.566	.4570	12:48 p. m.	.296	.133	.7774	12:48 p. m.	.296	.133	.7774
5:20 a. m.	2.98	1.34	.0572	8:08 a. m.	.805	.361	.4647	12:49 p. m.	.313	.141	.7797	12:49 p. m.	.313	.141	.7797
5:22 a. m. ³	2.58	1.16	.0988	8:09 a. m.	.671	.301	.4702	12:50 p. m.	.527	.237	.7828	12:50 p. m.	.527	.237	.7828
5:24 a. m.	1.45	.633	.1287	8:10 a. m.	.696	.312	.4753	12:51 p. m.	1.29	.579	.7896	12:51 p. m.	1.29	.579	.7896
5:25 a. m.	.892	.400	.1373	8:11 a. m.	.862	.387	.4811	12:52 p. m.	2.47	1.11	.8037	12:52 p. m.	2.47	1.11	.8037
5:26 a. m.	.527	.237	.1426	8:12 a. m.	1.26	.566	.4890	12:53 p. m.	2.26	1.01	.8213	12:53 p. m.	2.26	1.01	.8213
5:27 a. m.	.313	.141	.1457	8:13 a. m.	1.74	.781	.5002	12:54 p. m.	2.11	.947	.8376	12:54 p. m.	2.11	.947	.8376
5:28 a. m.	.207	.0929	.1476	8:14 a. m.	2.36	1.06	.5152	12:55 p. m.	2.26	1.01	.8539	12:55 p. m.	2.26	1.01	.8539
5:29 a. m.	.145	.0651	.1489	8:15 a. m.	2.63	1.18	.5338	12:57 p. m.	1.96	.880	.8854	12:57 p. m.	1.96	.880	.8854
5:30 a. m.	.094	.0422	.1498	8:16 a. m.	2.80	1.26	.5541	12:58 p. m.	1.65	.741	.8989	12:58 p. m.	1.65	.741	.8989
5:32 a. m.	.0471	.0211	.1508	8:17 a. m.	2.63	1.18	.5744	12:59 p. m.	1.33	.597	.9100	12:59 p. m.	1.33	.597	.9100
5:33 a. m.	.0288	.0129	.1511	8:18 a. m.	2.06	.925	.5919	1:00 p. m.	1.12	.503	.9191	1:00 p. m.	1.12	.503	.9191
5:35 a. m.	.0143	.0064	.1514	8:19 a. m.	1.49	.669	.6052	1:01 p. m.	1.02	.458	.9271	1:01 p. m.	1.02	.458	.9271
5:37 a. m.	.0021	.0009	.1515	8:20 a. m.	.953	.428	.6143	1:04 p. m.	1.19	.534	.9519	1:04 p. m.	1.19	.534	.9519
5:40 a. m.	0	0	0	8:21 a. m.	.723	.325	.6205	1:05 p. m.	1.12	.503	.9605	1:05 p. m.	1.12	.503	.9605
7:40 a. m. ²	0	0	0	8:22 a. m.	.527	.237	.6252	1:07 p. m.	1.15	.516	.9774	1:07 p. m.	1.15	.516	.9774
7:45 a. m.	.0021	.0009	0	8:23 a. m.	.284	.172	.6286	1:09 p. m.	1.02	.458	.9936	1:09 p. m.	1.02	.458	.9936
7:46 a. m.	.0348	.0156	.1516	8:24 a. m.	.264	.118	.6310	1:10 p. m.	.922	.414	1.0008	1:10 p. m.	.922	.414	1.0008
7:47 a. m.	.235	.106	.1617	8:25 a. m.	.193	.0866	.6327	1:12 p. m.	.671	.301	1.0117	1:12 p. m.	.671	.301	1.0117
7:48 a. m.	.505	.227	.1644	8:26 a. m.	.145	.0651	.6340	1:13 p. m.	.550	.247	1.0163	1:13 p. m.	.550	.247	1.0163
7:49 a. m.	.403	.181	.1678	8:28 a. m.	.0851	.0382	.6357	1:15 p. m.	.463	.208	1.0239	1:15 p. m.	.463	.208	1.0239
7:50 a. m.	.313	.141	.1705	8:30 a. m.	.0471	.0211	.6455	1:16 p. m.	.422	.189	1.0272	1:16 p. m.	.422	.189	1.0272
7:51 a. m.	.527	.237	.1728	8:32 a. m.	.0234	.0105	.6507	1:20 p. m.	.403	.181	1.0398	1:20 p. m.	.403	.181	1.0398
7:52 a. m.	1.15	.516	.1791	8:34 a. m.	.0073	.0033	.6509	1:22 p. m.	.384	.172	1.0456	1:22 p. m.	.384	.172	1.0456
7:53 a. m.	2.58	1.16	.1930	8:35 a. m.	.0021	.0009	0	1:23 p. m.	.220	.0988	1.0478	1:23 p. m.	.220	.0988	1.0478
7:54 a. m.	3.04	1.36	.2140	12:30 p. m. ²	0	0	.6509	1:24 p. m.	.168	.0754	1.0493	1:24 p. m.	.168	.0754	1.0493
7:55 a. m.	2.41	1.08	.2343	12:31 p. m.	0	0	.6509	1:25 p. m.	.123	.0522	1.0504	1:25 p. m.	.123	.0522	1.0504
7:56 a. m.	1.87	.840	.2503	12:32 p. m.	.0610	.0274	.6513	1:27 p. m.	.0686	.0308	1.0518	1:27 p. m.	.0686	.0308	1.0518
7:57 a. m.	1.29	.579	.2621	12:33 p. m.	.621	.279	.6536	1:28 p. m.	.0417	.0211	1.0522	1:28 p. m.	.0417	.0211	1.0522
7:58 a. m.	.953	.428	.2705	12:34 p. m.	2.47	1.11	.6659	1:30 p. m.	.0234	.0105	1.0527	1:30 p. m.	.0234	.0105	1.0527
7:59 a. m.	.862	.387	.2773	12:35 p. m.	3.35	1.50	.6868	1:32 p. m.	.0073	.0033	1.0529	1:32 p. m.	.0073	.0033	1.0529
8:00 a. m.	2.63	1.18	.2903	12:36 p. m.	2.98	1.34	.7104	1:35 p. m.	0	0	1.0529	1:35 p. m.	0	0	1.0529
8:01 a. m.	3.82	1.72	.3144	12:37 p. m.	2.36	1.06	.7304	2:00 p. m. ³	0	0	0	2:00 p. m. ³	0	0	0
8:02 a. m.	4.55	2.04	.3457	12:38 p. m.	1.29	.579	.7440								

¹ Observed flow without corrections for base flow.² Rain began.³ Rain ended.

TABLE 88.—Run-off from watershed 129 for selected storms, 1939

[Area 2.47 acres; rainfall measured at recording rain gage 100]

Date and time		Discharge ¹		Accumulated run-off	Date and time		Discharge ¹		Accumulated run-off	Date and time		Discharge ¹		Accumulated run-off
STORM OF FEB. 14-15, TOTAL RAINFALL 1.48 INCHES					STORM OF JUNE 18-19, TOTAL RAINFALL 2.57 INCHES					STORM OF JULY 8, TOTAL RAINFALL 2.52 INCHES—Continued				
Feb. 14:		Sec.-ft.	In. per hr.	In.	June 18:		Sec.-ft.	In. per hr.	In.	July 8—Con.		Sec.-ft.	In. per hr.	In.
9:20 p. m.-----		0	0	0	12:15 p. m.-----		0	0	0	5:30 a. m.-----		0.010	0.0040	0.0023
10:00 p. m.-----		.004	.0016	.0006	12:20 p. m.-----		.019	.0076	.0003	5:40 a. m.-----		0	0	.0026
11:00 p. m.-----		.007	.0028	.0028	12:25 p. m.-----		.042	.0168	.0013	7:34 a. m. ² -----		0	0	
12:00 p. m.-----		.007	.0028	.0056	12:28 p. m.-----		.062	.0251	.0023	7:36 a. m.-----		0	0	.0026
Feb. 15:					12:30 p. m.-----		.070	.0281	.0032	7:37 a. m.-----		.010	.0040	.0026
1:00 a. m.-----		.010	.0040	.0090	12:40 p. m.-----		.078	.0313	.0082	7:40 a. m.-----		.010	.0040	.0028
2:00 a. m.-----		.010	.0040	.0130	12:50 p. m.-----		.055	.0221	.0126	7:45 a. m.-----		.010	.0040	.0031
2:20 a. m.-----		.010	.0040	.0143	1:00 p. m.-----		.030	.0120	.0154	7:47 a. m.-----		.030	.0120	.0034
2:25 a. m.-----		.030	.0120	.0150	1:15 p. m.-----		.010	.0040	.0174	7:48 a. m.-----		.086	.0346	.0038
2:30 a. m.-----		.042	.0168	.0162	1:30 p. m.-----		0	0	.0179	7:50 a. m.-----		.169	.0679	.0055
2:40 a. m.-----		.055	.0221	.0194										
2:50 a. m.-----		.070	.0281	.0236	STORM OF JULY 8, TOTAL RAINFALL 2.52 INCHES									
3:00 a. m.-----		.070	.0281	.0283										
3:10 a. m.-----		.062	.0257	.0327										
3:20 a. m.-----		.042	.0168	.0362										
3:30 a. m.-----		.042	.0168	.0390										
3:40 a. m.-----		.055	.0221	.0422										
4:00 a. m.-----		.055	.0221	.0496										
4:10 a. m.-----		.055	.0221	.0533										
4:20 a. m.-----		.042	.0168	.0565										
4:30 a. m.-----		.019	.0076	.0585										
4:50 a. m.-----		.004	.0016	.0600										
5:00 a. m.-----		0	0	.0601										
					July 8:									
					5:05 a. m. ² -----		0	0	0					
					5:12 a. m.-----		.010	.0040	0					
					5:13 a. m.-----		.030	.0120	.0001					
					5:15 a. m.-----		.030	.0120	.0005					
					5:20 a. m. ³ -----		.024	.0096	.0014					
					5:25 a. m.-----		.010	.0040	.0020					

¹ Observed flow without corrections for base flow.² Rain began.³ Rain ended.

TABLE 88.—Run-off from watershed 129 for selected storms, 1939—Continued

Date and time		Discharge		Accumulated run-off		Date and time		Discharge		Accumulated run-off		Date and time		Discharge		Accumulated run-off	
STORM OF JULY 8, TOTAL RAINFALL 2.52 INCHES—Continued						STORM OF JULY 8, TOTAL RAINFALL 2.52 INCHES—Continued						STORM OF OCT. 25-27, TOTAL RAINFALL 3.85 INCHES—Continued					
July 8—Con.		Sec.-ft.	In. per hr.	In.		July 8—Con.		Sec.-ft.	In. per hr.	In.		Oct. 26—Con.		Sec.-ft.	In. per hr.	In.	
8:35 a. m.		0.036		0.1402		1:50 p. m.		0.030	0.0120	0.3728		12:10 p. m. ³		0	0		
8:40 a. m.		.019		.1411		2:00 p. m.		.019	.0076	.3744		Oct. 27:					
8:50 a. m.		.007		.1420		2:30 p. m.		.004	.0016	.3767		4:00 a. m. ¹		0	0		
9:00 a. m.		.004		.1424		3:00 p. m. ³		0	0	.3771		4:07 a. m.		0	0		
9:30 a. m.		0	0	.1428								4:10 a. m.		.004	.0016	0.0619	
12:26 p. m. ²		0	0	.1428								4:20 a. m.		.010	.0040	.0624	
12:32 p. m.		0	0	.1428								4:50 a. m.		.0145	.0058	.0648	
12:33 p. m.		.019	.0076	.1429								4:55 a. m.		.0145	.0058	.0653	
12:35 p. m.		.010	.0040	.1431								4:56 a. m.		.0145	.0058	.0654	
12:38 p. m.		.019	.0076	.1434								4:57 a. m.		.030	.0120	.0655	
12:39 p. m.		.055	.0221	.1436								4:59 a. m.		.0625	.0251	.0661	
12:40 p. m.		.086	.0346	.1441								5:00 a. m.		.086	.0346	.0666	
12:41 p. m.		.094	.0378	.1447								5:05 a. m.		.149	.0598	.0705	
12:45 p. m.		.070	.0281	.1469								5:08 a. m.		.159	.0639	.0736	
12:49 p. m.		.055	.0221	.1486								5:10 a. m.		.179	.0719	.0759	
12:50 p. m.		.070	.0281	.1490								5:11 a. m.		.190	.0763	.0771	
12:51 p. m.		.139	.0559	.1497								5:15 a. m.		.149	.0598	.0816	
12:52 p. m.		.223	.0896	.1509								5:20 a. m.		.111	.0446	.0860	
12:53 p. m.		.270	.108	.1525								5:25 a. m.		.070	.0281	.0890	
12:54 p. m.		.430	.173	.1548								5:30 a. m.		.0485	.0194	.0908	
12:55 p. m.		.610	.245	.1583								5:40 a. m.		.019	.0076	.0930	
12:56 p. m.		1.03	.414	.1638								5:50 a. m.		.010	.0040	.0940	
12:57 p. m.		1.27	.510	.1715								6:00 a. m.		0	0	.0943	
12:58 p. m.		1.44	.579	.1806								9:20 a. m.		0	0	.0943	
1:00 p. m.		1.48	.595	.2002								9:30 a. m.		.010	.0040	.0946	
1:02 p. m.		1.57	.631	.2262								9:35 a. m.		.010	.0040	.0949	
1:05 p. m.		1.39	.559	.2560								9:40 a. m.		.019	.0076	.0954	
1:10 p. m.		1.03	.414	.2965								9:45 a. m.		.042	.0168	.0964	
1:15 p. m.		.680	.273	.3251								9:50 a. m.		.042	.0168	.0978	
1:20 p. m.		.430	.173	.3437								10:00 a. m.		.036	.0145	.1004	
1:25 p. m.		.258	.104	.3552								10:10 a. m.		.024	.0096	.1024	
1:30 p. m.		.159	.0639	.3622								10:30 a. m.		.010	.0040	.1047	
1:35 p. m.		.102	.0410	.3666								10:50 a. m.		0	0	.1054	
1:40 p. m.		.070	.0281	.3695								2:00 p. m. ^{3 4}		0	0		
1:45 p. m.		.048	.0194	.3715													

² Rain began, shower on Oct. 25 caused no run-off.³ Rain ended.⁴ Showers on Oct. 28, no run-off.

TABLE 89.—Run-off from watershed 130 for selected storms, 1939

[Area 1.63 acres; rainfall measured at recording rain gage 103]

Date and time				Discharge ¹				Accumulated run-off			
STORM OF FEB. 14-15, TOTAL RAINFALL 1.37 INCHES				STORM OF JUNE 18-19, TOTAL RAINFALL 1.37 INCHES—Continued				STORM OF JULY 8, TOTAL RAINFALL 2.60 INCHES			
Feb. 15:				June 18—Con.				July 8:			
Sec.-ft.				Sec.-ft.				Sec.-ft.			
In. per hr.				In. per hr.				In. per hr.			
In.				In.				In.			
1:22 a. m.-----				11:13 a. m.-----				5:07 a. m. ² -----			
0				0.022				0			
1:23 a. m.-----				11:15 a. m.-----				5:17 a. m.-----			
0.011				.022				0			
1:25 a. m.-----				11:25 a. m.-----				5:18 a. m.-----			
.014				.022				.105			
1:30 a. m.-----				11:30 a. m.-----				5:19 a. m.-----			
.018				.036				.144			
1:40 a. m.-----				11:40 a. m.-----				5:20 a. m. ³ -----			
.031				.022				.135			
1:50 a. m.-----				11:50 a. m.-----				5:22 a. m.-----			
.041				.014				.090			
2:00 a. m.-----				12:00 m.-----				5:23 a. m.-----			
.052				.003				.064			
2:20 a. m.-----				12:02 p. m.-----				5:25 a. m.-----			
.070				0				.031			
2:40 a. m.-----				12:23 p. m.-----				5:29 a. m.-----			
.105				0				.008			
3:00 a. m.-----				12:24 p. m.-----				5:30 a. m.-----			
.120				.014				.003			
3:10 a. m.-----				12:25 p. m.-----				5:31 a. m.-----			
.090				.018				0			
3:20 a. m.-----				12:29 p. m.-----				7:10 a. m. ² -----			
.052				.022				0			
3:30 a. m.-----				12:30 p. m.-----				7:48 a. m.-----			
.036				.018				0			
3:40 a. m.-----				12:40 p. m.-----				7:49 a. m.-----			
.022				.008				.052			
3:45 a. m.-----				12:45 p. m.-----				7:50 a. m.-----			
.022				.003				.135			
3:47 a. m.-----				12:46 p. m.-----				7:51 a. m.-----			
.041				0				.240			
3:50 a. m.-----				June 19:				7:53 a. m.-----			
.070				12:23 a. m.-----				.390			
3:55 a. m.-----				12:24 a. m.-----				.490			
.077				0				.754 a. m.-----			
4:00 a. m.-----				.014				.490			
.070				.014				.755 a. m.-----			
4:10 a. m.-----				.014				.620			
.046				.014				.760			
4:20 a. m.-----				.022				7:56 a. m.-----			
.041				.022				7:58 a. m.-----			
4:40 a. m.-----				12:30 a. m.-----				1.06			
.041				.018				1.10			
5:00 a. m.-----				12:40 a. m.-----				1.16			
.036				.008				1.10			
5:10 a. m.-----				12:45 a. m.-----				8:05 a. m.-----			
.022				.003				8:08 a. m.-----			
5:20 a. m.-----				12:47 a. m.-----				8:10 a. m.-----			
.011				0				8:15 a. m. ³ -----			
5:30 a. m.-----				3:25 a. m.-----				8:20 a. m.-----			
.003				0				8:25 a. m.-----			
5:33 a. m.-----				3:26 a. m.-----				8:30 a. m.-----			
0				.014				8:35 a. m.-----			
STORM OF JUNE 18-19, TOTAL RAINFALL 2.29 INCHES				3:27 a. m.-----				8:40 a. m.-----			
June 18:				.018				8:45 a. m.-----			
11:12 a. m.-----				.022				8:50 a. m.-----			
0				.014				9:00 a. m.-----			
0				.018				.090			
0				.022				.135			
				.018				.0820			
				.008				.0547			
				.008				.0316			
				.003				.0219			
				0				.0134			
				0				.0069			
				0				.2689			

¹ Observed flow without corrections for base flow.² Rain began.³ Rain ended.

TABLE 89.—Run-off from watershed 130 for selected storms, 1939—Continued

Date and time		Discharge		Accumulated run-off	Date and time		Discharge		Accumulated run-off	Date and time		Discharge		Accumulated run-off					
STORM OF JULY 8, TOTAL RAINFALL 2.60 INCHES—Continued					STORM OF JULY 8, TOTAL RAINFALL 2.60 INCHES—Continued					STORM OF OCT. 25-27, TOTAL RAINFALL 3.52 INCHES—Continued									
July 8—Con.		Sec.-ft.	In. per hr.	In.	July 8—Con.		Sec.-ft.	In. per hr.	In.	Oct. 26—Con.		Sec.-ft.	In. per hr.	In.					
9:04 a. m.-----		0	0	0.2691	2:20 p. m.-----		0.014	0.0085	0.5076	9:30 a. m.-----		0	0	0.0369					
12:20 p. m. ² -----		0	0		2:30 p. m.-----		.008	.0049	.5087	Oct. 27:									
12:36 p. m.-----		0	0	.2691	2:33 p. m.-----		0	0	.5088	4:05 a. m. ² -----		0	0						
12:37 p. m.-----		.135	.0820	.2698	STORM OF OCT. 25-27, TOTAL RAINFALL 3.52 INCHES										4:49 a. m.-----		0	0	
12:40 p. m.-----		.105	.0638	.2734											5:00 a. m.-----		.002	.0012	
12:43 p. m.-----		.064	.0389	.2760	5:03 a. m.-----		.008	.0049	.0370	4:52 a. m.-----		.008	.0049						
12:45 p. m.-----		.052	.0316	.2772	5:05 a. m.-----		.018	.0109	.0371	4:53 a. m.-----		.018	.0109						
12:47 p. m.-----		.041	.0249	.2781	5:07 a. m.-----		.031	.0188	.0376	4:55 a. m.-----		.031	.0188						
12:49 p. m.-----		.052	.0316	.2790	5:10 a. m.-----		.052	.0316	.0384	4:57 a. m.-----		.052	.0316						
12:50 p. m.-----		.105	.0638	.2798	5:12 a. m.-----		.090	.0547	.0398	4:59 a. m.-----		.090	.0547						
12:51 p. m.-----		.222	.135	.2815	5:15 a. m.-----		.105	.0638	.0408	5:00 a. m.-----		.105	.0638						
12:52 p. m.-----		.300	.182	.2841	5:20 a. m.-----		.128	.0778	.0443	5:03 a. m.-----		.128	.0778						
12:53 p. m.-----		.440	.268	.2879	5:25 a. m.-----		.120	.0730	.0468	5:05 a. m.-----		.120	.0730						
12:55 p. m.-----		.670	.407	.2991	5:30 a. m.-----		.090	.0547	.0489	5:07 a. m.-----		.090	.0547						
12:56 p. m.-----		.730	.444	.3062	5:10 a. m.-----		.052	.0316	.0511	5:10 a. m.-----		.052	.0316						
1:00 p. m.-----		.700	.426	.3352	5:12 a. m.-----		.031	.0188	.0519	5:12 a. m.-----		.031	.0188						
1:05 p. m.-----		.810	.492	.3734	5:15 a. m.-----		.018	.0109	.0526	5:15 a. m.-----		.018	.0109						
1:06 p. m.-----		.810	.492	.3816	5:20 a. m.-----		.006	.0036	.0532	5:20 a. m.-----		.006	.0036						
1:08 p. m.-----		.760	.462	.3975	5:25 a. m.-----		0	0	.0534	5:25 a. m.-----		0	0						
1:10 p. m.-----		.670	.407	.4120	9:32 a. m.-----		0	0	.0534	9:32 a. m.-----		0	0						
1:15 p. m.-----		.490	.182	.4365	9:34 a. m.-----		.008	.0049	.0535	9:34 a. m.-----		.008	.0049						
1:20 p. m. ³ -----		.350	.213	.4530	9:35 a. m.-----		.014	.0085	.0536	9:35 a. m.-----		.014	.0085						
1:25 p. m.-----		.240	.146	.4680	9:37 a. m.-----		.022	.0134	.0540	9:37 a. m.-----		.022	.0134						
1:30 p. m.-----		.168	.102	.4783	9:40 a. m.-----		.014	.0085	.0546	9:40 a. m.-----		.014	.0085						
1:35 p. m.-----		.120	.0730	.4856	9:45 a. m.-----		.003	.0012	.0550	9:45 a. m.-----		.003	.0012						
1:40 p. m.-----		.090	.0547	.4909	9:50 a. m.-----		0	0		9:50 a. m.-----		0	0						
1:50 p. m.-----		.052	.0316	.4981	10:50 a. m. ³ -----		0	0		10:50 a. m. ³ -----		0	0						
2:00 p. m.-----		.036	.0219	.5025															
2:10 p. m.-----		.026	.0157	.5056															

² Rain began, shower on Oct. 25 caused no run-off.³ Rain ended.⁴ Showers Oct. 28, no run-off.

TABLE 90.—Run-off from watershed 131 for selected storms, 1939

[Area 2.21 acres; rainfall measured at recording rain gages 145, 146, 102]

Date and time		Discharge ¹		Accumulated run-off	Date and time		Discharge ¹		Accumulated run-off	Date and time		Discharge ¹		Accumulated run-off				
STORM OF FEB. 14-15; TOTAL RAINFALL 1.36 INCHES					STORM OF JUNE 18-19; TOTAL RAINFALL 2.47 INCHES—Continued					STORM OF JULY 8; TOTAL RAINFALL 2.62 INCHES—Continued								
Feb. 14:		Sec.-ft.	In. per hr.	In.	June 18—Con.		Sec.-ft.	In. per hr.	In.	July 8—Con.		Sec.-ft.	In. per hr.	In.				
11:00 p. m.-----		0	0	0	11:05 a. m.-----		0.001	0.0004	0	8:06 a. m.-----		0.001	0.0005	0.0008				
11:15 p. m.-----		0.001	0.0004	0	11:10 a. m.-----		.001	.0004	.0001	8:10 a. m.-----		.008	.0036	.0009				
11:30 p. m.-----		.001	.0004	.0001	11:15 a. m.-----		.0005	.0002		8:13 a. m.-----		.038	.0171	.0014				
11:45 p. m.-----		.001	.0004	.0002	11:30 a. m.-----		0	0		8:15 a. m.-----		.054	.0242	.0021				
12:00 p. m.-----		.001	.0004	.0003	June 19:					8:17 a. m.-----		.055	.0247	.0029				
Feb. 15:					11:01 a. m.-----		0	0		8:20 a. m.-----		.054	.0242	.0042				
12:15 a. m.-----		.001	.0004	.0004	11:05 a. m.-----		.0025	.0011	.0001	8:30 a. m.-----		.031	.0139	.0079				
12:30 a. m.-----		.001	.0004	.0005	11:07 a. m.-----		.004	.0018	.0002	8:45 a. m.-----		.008	.0036	.0101				
12:45 a. m.-----		.001	.0004	.0006	11:10 a. m.-----		.006	.0027	.0003	8:55 a. m.-----		.004	.0018	.0105				
1:00 a. m.-----		.0025	.0011	.0008	11:15 a. m.-----		.008	.0036	.0006	9:00 a. m.-----		.002	.0011	.0106				
1:15 a. m.-----		.0025	.0011	.0011	11:30 a. m.-----		.0004	.0018	.0013	9:20 a. m.-----		0	0	.0108				
1:30 a. m.-----		.004	.0018	.0015	11:45 a. m.-----		.0025	.0011	.0017	12:49 p. m.-----		0	0					
1:45 a. m.-----		.004	.0018	.0019	2:00 p. m.-----		.001	.0004	.0019	12:51 p. m.-----		.004	.0018	.0108				
2:00 a. m.-----		.004	.0018	.0023	2:10 p. m.-----		0	0		12:57 p. m.-----		.008	.0036	.0101				
2:30 a. m.-----		.004	.0018	.0032	3:05 p. m.-----		0	0		12:58 p. m.-----		.018	.0081	.0111				
3:00 a. m.-----		.004	.0018	.0041	3:15 p. m.-----		.001	.0004	.0019	1:00 p. m.-----		.046	.0260	.0117				
3:05 a. m.-----		.004	.0018	.0043	3:30 p. m.-----		.006	.0027	.0023	1:01 p. m.-----		.072	.0324	.0122				
3:10 a. m.-----		.018	.0081	.0047	3:45 p. m.-----		.008	.0036	.0031	1:03 p. m.-----		.114	.0512	.0136				
3:15 a. m.-----		.024	.0108	.0055	3:50 p. m.-----		.008	.0036	.0034	1:04 p. m.-----		.149	.0670	.0146				
3:20 a. m.-----		.024	.0108	.0064	4:00 p. m.-----		.008	.0036	.0040	1:05 p. m.-----		.162	.0720	.0158				
3:25 a. m.-----		.024	.0108	.0073	4:30 p. m.-----		.008	.0036	.0058	1:07 p. m.-----		.230	.103	.0187				
3:29 a. m.-----		.042	.0189	.0083	5:00 p. m.-----		.004	.0018	.0072	1:10 p. m.-----		.230	.103	.0239				
3:30 a. m.-----		.031	.0139	.0086	5:30 p. m.-----		.0005	.0002		1:13 p. m.-----		.162	.0728	.0283				
3:45 a. m.-----		.021	.0094	.0115	5:40 p. m.-----		0	0	.0072	1:21 p. m.-----		.125	.0561	.0369				
4:00 a. m.-----		.018	.0081	.0137						1:25 p. m.-----		.114	.0512	.0405				
4:30 a. m.-----		.013	.0058	.0172	STORM OF JULY 8; TOTAL RAINFALL 2.62 INCHES					1:30 p. m.-----		.092	.0413	.0444				
5:00 a. m.-----		.008	.0036	.0196						1:40 p. m.-----		.058	.0261	.0500				
5:30 a. m.-----		.006	.0027	.0212						1:50 p. m. ³ -----		.038	.0261	.0544				
6:00 a. m.-----		.0025	.0011	.0222						2:00 p. m.-----		.031	.0139	.0577				
6:15 a. m.-----		.001	.0004	.0224						2:20 p. m.-----		.018	.0088	.0615				
6:30 a. m.-----		.001	.0004	.0225						2:30 p. m.-----		.013	.0058	.0627				
7:00 a. m.-----		.001	.0004	.0227	July 8:					3:00 p. m.-----		.004	.0018	.0646				
8:00 a. m.-----		.001	.0004	.0231	5:05 a. m. ² -----					0	0	0	3:30 p. m.-----		.001	.0005	.0652	
1:00 p. m.-----		.0005	.0002	.0232	5:13 a. m.-----					.001	.0005	0	4:00 p. m.-----		0	0	.0653	
					5:15 a. m.-----					0	0	0						
					5:18 a. m.-----					.004	.0018	.0001						
					5:20 a. m.-----					.004	.0018	.0002						
					5:22 a. m.-----					.001	.0005							
					5:27 a. m.-----					0	0							
					7:38 a. m.-----					0	0							
					7:41 a. m.-----					.001	.0005							
					7:46 a. m.-----					.002	.0018	.0002						
					7:49 a. m.-----					.006	.0027	.0003						
					8:00 a. m.-----					.004	.0018	.0007						
STORM OF JUNE 18-19; TOTAL RAINFALL 2.47 INCHES										STORM OF OCT. 25-27; TOTAL RAINFALL 4.05 INCHES								
June 18:					Oct. 25:					Oct. 25:								
10:59 a. m.-----		0	0	0	12:14 a. m. ² -----		0	0	0	12:14 a. m. ² -----		0	0	0				
11:00 a. m.-----		.0005	.0002	0	12:27 a. m.-----		0	0	0	12:27 a. m.-----		0	0	0				

¹ Observed flow without corrections for base flow.² Rain began.³ Rain ended.

TABLE 90.—Run-off from watershed 131 for selected storms, 1939—Continued

Date and time		Discharge		Accumulated run-off	Date and time		Discharge		Accumulated run-off	Date and time		Discharge		Accumulated run-off	
STORM OF OCT. 25-27, TOTAL RAINFALL 4.05 INCHES—Continued					STORM OF OCT. 25-27, TOTAL RAINFALL 4.05 INCHES—Continued					STORM OF OCT. 25-27, TOTAL RAINFALL 4.05 INCHES—Continued					
Oct. 25—Con.	Sec.-ft.	In. per hr.	In.	Oct. 26:	Sec.-ft.	In. per hr.	In.	Oct. 27—Con.	Sec.-ft.	In. per hr.	In.	Oct. 27—Con.	Sec.-ft.	In. per hr.	In.
12:30 a. m.-----	0.0002	0.0001	0	8:31 a. m.-----	0	0		5:00 a. m.-----	0.008	0.0036	0.0034	5:00 a. m.-----	0.008	0.0036	0.0034
12:35 a. m.-----	.0002	.0002	0	8:32 a. m.-----	.001	.0004	0.0007	5:05 a. m.-----	.006	.0027	.0037	5:05 a. m.-----	.006	.0027	.0037
12:45 a. m.-----	.0005	.0002	.0001	8:34 a. m.-----	.008	.0036	.0008	5:10 a. m.-----	.004	.0018	.0039	5:10 a. m.-----	.004	.0018	.0039
1:00 a. m.-----	0	0		8:35 a. m.-----	.013	.0058	.0009	5:20 a. m.-----	.001	.0004	.0041	5:20 a. m.-----	.001	.0004	.0041
4:02 p. m.-----	0	0		8:37 a. m.-----	.024	.0108	.0012	5:40 a. m.-----	.001	.0004	.0042	5:40 a. m.-----	.001	.0004	.0042
4:03 p. m.-----	0	0		8:40 a. m.-----	.021	.0094	.0017	6:00 a. m.-----	.0005	.0002	.0043	6:00 a. m.-----	.0005	.0002	.0043
4:05 p. m.-----	.0005	.0002		8:45 a. m.-----	.006	.0027	.0022	6:10 a. m.-----	0	0		6:10 a. m.-----	0	0	
4:15 p. m.-----	.0005	.0002		8:50 a. m.-----	.002	.0009	.0024	8:15 a. m.-----	0	0		8:15 a. m.-----	0	0	
4:30 p. m.-----	.001	.0004	.0002	8:55 a. m.-----	.001	.0004	.0025	8:20 a. m.-----	.0005	.0002		8:20 a. m.-----	.0005	.0002	
4:40 p. m.-----	.0005	.0002	.0003	9:00 a. m. ³ -----	.001	.0004	.0025	8:30 a. m.-----	.0005	.0002	.0043	8:30 a. m.-----	.0005	.0002	.0043
4:45 p. m.-----	.001	.0004	.0003	9:10 a. m.-----	.0005	.0002	.0026	8:40 a. m.-----	0	0	.0044	8:40 a. m.-----	0	0	.0044
5:00 p. m.-----	.0005	.0002	.0004	9:20 a. m.-----	0	0		9:22 a. m.-----	0	0		9:22 a. m.-----	0	0	
5:15 p. m.-----	T	.0001		Oct. 27:				9:25 a. m.-----	.0005	.0002		9:25 a. m.-----	.0005	.0002	
5:50 p. m.-----	0	0		4:03 a. m. ² -----	0	0		9:30 a. m.-----	.001	.0004	.0044	9:30 a. m.-----	.001	.0004	.0044
5:55 p. m.-----	.001	.0004		4:15 a. m.-----	0	0		9:32 a. m.-----	.0025	.0011	.0045	9:32 a. m.-----	.0025	.0011	.0045
6:00 p. m.-----	.0005	.0002	.0004	4:30 a. m.-----	.0005	.0002		9:35 a. m.-----	.001	.0004	.0045	9:35 a. m.-----	.001	.0004	.0045
6:30 p. m.-----	0	0	.0005	4:35 a. m.-----	.0005	.0002	.0026	9:40 a. m.-----	.001	.0004	.0046	9:40 a. m.-----	.001	.0004	.0046
10:35 p. m.-----	0	0		4:40 a. m.-----	.001	.0004	.0027	10:00 a. m.-----	.0005	.0002	.0047	10:00 a. m.-----	.0005	.0002	.0047
10:40 p. m.-----	.001	.0004		4:45 a. m.-----	.004	.0018	.0028	10:15 a. m.-----	0	0		10:15 a. m.-----	0	0	
10:45 p. m.-----	.001	.0004	.0005	4:50 a. m.-----	.004	.0018	.0029	11:00 a. m. ³ -----	0	0	.0047	11:00 a. m. ³ -----	0	0	.0047
11:00 p. m.-----	.001	.0004	.0006	4:55 a. m.-----	.006	.0027	.0031								
11:30 p. m.-----	0	0	.0007												

² Rain began.³ Rain ended.

TABLE 91.—Run-off from watershed 134 for selected storms, 1939

[Area 0.916 acre; rainfall measured at recording rain gage 102]

Date and time		Discharge ¹		Accumulated run-off	Date and time		Discharge ¹		Accumulated run-off	Date and time		Discharge ¹		Accumulated run-off		
STORM OF FEB. 14-15, TOTAL RAINFALL 1.36 INCHES					STORM OF JUNE 18-19, TOTAL RAINFALL 2.59 INCHES—Continued					STORM OF JUNE 18-19, TOTAL RAINFALL 2.59 INCHES—Continued						
Feb. 15:					June 18—Con.					June 19—Con.						
1:07 a. m.		Sec.-ft.	In. per hr.	In.	10:30 a. m.		Sec.-ft.	In. per hr.	In.	1:30 a. m.		Sec.-ft.	In. per	In.		
1:08 a. m.		0	0	0	10:50 a. m.		0.008	0.0086	0.0291	1:45 a. m.		0.004	0.0043	0.1253		
1:10 a. m.		.008	.0086	.0001	10:55 a. m.		.004	.0043	.0313			0	0	.1259		
1:13 a. m.		.0105	.0113	.0004	11:00 a. m.		.004	.0043	.0317	STORM OF JULY 8, TOTAL RAINFALL 2.60 INCHES						
1:15 a. m.		.013	.0140	.0010	11:05 a. m.		.008	.0086	.0322							
1:20 a. m.		.018	.0194	.0016	11:07 a. m.		.018	.0194	.0334							
1:25 a. m.		.031	.0335	.0038	11:10 a. m.		.031	.0335	.0343							
1:30 a. m.		.054	.0583	.0114	11:12 a. m.		.054	.0583	.0366							
1:40 a. m.		.082	.0886	.0236	11:15 a. m.		.063	.0680	.0387							
1:50 a. m.		.092	.0994	.0393	11:20 a. m.		.0585	.0632	.0420							
2:00 a. m.		.092	.0994	.0559	11:30 a. m.		.0410	.0463	.0463							
2:05 a. m.		.092	.0994	.0642	11:40 a. m.		.0372	.0528	.0528							
2:10 a. m.		.082	.0886	.0720	11:45 a. m.		.0297	.0584	.0584							
2:20 a. m.		.082	.0886	.0868	11:50 a. m.		.0226	.0606	.0606					.0002		
2:30 a. m.		.092	.0994	.1025	12:00 m.		.0621	.0640	.0621					.0005		
2:40 a. m.		.098	.106	.1196	12:10 p. m.		.008	.0086	.0640					.0008		
2:50 a. m.		.103	.111	.1377	12:15 p. m.		.004	.0043	.0651					.0012		
2:55 a. m.		.092	.0994	.1465	12:20 p. m.		.004	.0043	.0653					.0018		
3:00 a. m.		.072	.0778	.1539	12:25 p. m.		.006	.0065	.0655					.0028		
3:05 a. m.		.058	.0626	.1597	12:30 p. m.		.0105	.0113	.0662					.0063		
3:10 a. m.		.038	.0410	.1640	12:35 p. m.		.018	.0194	.0675					.0115		
3:15 a. m.		.024	.0259	.1668	12:40 p. m.		.021	.0226	.0682					.0142		
3:20 a. m.		.013	.0140	.1685	12:45 p. m.		.018	.0194	.0692					.0183		
3:30 a. m.		.004	.0043	.1700	12:50 p. m.		.008	.0086	.0715					.0220		
3:50 a. m.		.001	.0011	.1709	1:00 p. m.		.004	.0043	.0726					.0233		
4:00 a. m.		.001	.0011	.1711	1:10 p. m.		.001	.0011	.0730					.0242		
5:00 a. m.		.004	.0043	.1737	6:40 p. m.		0	0	.0731					.0248		
6:00 a. m.		.008	.0086	.1801	7:00 p. m.		0	0	.0731					.0250		
7:00 a. m.		.004	.0043	.1865	7:20 p. m.		.001	.0011	.0733					.0253		
7:30 a. m.		.004	.0043	.1887	7:30 p. m.		.001	.0011	.0737					.0254		
7:50 a. m.		.004	.0043	.1901	7:40 p. m.		.004	.0043	.0741							
7:55 a. m.		.0025	.0027	.1904	8:00 p. m.		.006	.0065	.0750					.0254		
8:00 a. m.		.001	.0011	.1906	8:30 p. m.		.004	.0043	.0768					.0255		
8:03 a. m.		0	0	.1906	11:40 p. m.		0	0	.0779					.0259		
STORM OF JUNE 18-19, TOTAL RAINFALL OF 2.59 INCHES					June 19:		11:50 p. m.		.001	.0011	.0779				.0266	
					12:00 p. m.		.008	.0086	.0788							.0270
					12:05 a. m.		.013	.0140	.0797							.0283
					12:06 a. m.		.0155	.0167	.0800							.0306
					12:10 a. m.		.031	.0335	.0817							.0323
					12:15 a. m.		.046	.0497	.0852							.0371
					12:20 a. m.		.054	.0583	.0897							.0451
					12:25 a. m.		.0675	.0728	.0952							.0510
					12:27 a. m.		.0675	.0728	.0976							.0591
					12:30 a. m.		.063	.0680	.1011							.0698
					12:35 a. m.		.050	.0540	.1062							.0837
					12:45 a. m.		.031	.0335	.1135							.1012
12:50 a. m.		.0275	.0297	.1161							.1216					
1:00 a. m.		.018	.0194	.1202							.1902					
1:15 a. m.		.008	.0086	.1237							.2138					

¹ Observed flow without corrections for base flow.² Rain began.³ Rain ended.

TABLE 91.—Run-off from watershed 134 for selected storms, 1939—Continued

Date and time	Discharge	Accumulated run-off	Date and time	Discharge	Accumulated run-off	Date and time	Discharge	Accumulated run-off
STORM OF JULY 8, TOTAL RAINFALL 2.60 INCHES—Continued			STORM OF JULY 8, TOTAL RAINFALL 2.60 INCHES—Continued			STORM OF OCT. 25-27, TOTAL RAINFALL 3.49 INCHES—Continued		
July 8—Con.	Sec.-ft.	In. per hr.	July 8—Con.	Sec.-ft.	In. per hr.	Oct. 26—Con.	Sec.-ft.	In. per hr.
8:05 a. m.	0.69	0.745	1:08 p. m.	0.48	0.518	8:55 a. m.	0.018	0.0194
8:07 a. m.	.52	.562	1:10 p. m.	.43	.464	8:57 a. m.	.0105	.0113
8:10 a. m.	.36	.389	1:15 p. m.	.28	.302	9:00 a. m.	.008	.0086
8:12 a. m.	.28	.302	1:20 p. m.	.18	.194	9:10 a. m.	.004	.0043
8:15 a. m. ³	.20	.216	1:25 p. m.	.114	.123	9:20 a. m. ³	0	0
8:17 a. m.	.162	.175	1:30 p. m.	.072	.0777	Oct. 27:		
8:20 a. m.	.114	.123	1:35 p. m.	.046	.0496	4:00 a. m. ²	0	0
8:25 a. m.	.063	.068	1:40 p. m.	.0345	.0372	4:45 a. m.	.0025	.0027
8:30 a. m.	.031	.0335	1:45 p. m.	.0275	.0295	4:50 a. m.	.004	.0043
8:35 a. m.	.018	.0194	1:50 p. m.	.024	.0259	4:51 a. m.	.004	.0043
8:40 a. m.	.013	.0140	2:00 p. m.	.018	.0194	4:53 a. m.	.013	.0140
8:50 a. m.	.006	.0065	2:10 p. m. ³	.0155	.0167	4:55 a. m.	.018	.0194
9:00 a. m.	.0025	.0027	2:20 p. m.	.013	.0140	4:58 a. m.	.031	.0335
9:20 a. m.	.001	.0011	2:40 p. m.	.008	.0086	5:00 a. m.	.042	.0454
9:40 a. m.	.0005	.0005	3:00 p. m.	.006	.0065	5:02 a. m.	.0585	.0632
10:00 a. m.	0	0	4:00 p. m.	.004	.0043	5:05 a. m.	.082	.0885
12:26 p. m. ²	0	0	6:00 p. m.	.001	.0011	5:06 a. m.	.082	.0885
12:29 p. m.	0	0	8:00 p. m.	0	0	5:08 a. m.	.072	.0777
12:30 p. m.	.001	.0011				5:10 a. m.	.063	.0680
12:32 p. m.	.013	.0140	STORM OF OCT. 25-27, TOTAL RAINFALL 3.49 INCHES			5:15 a. m.	.038	.0410
12:33 p. m.	.018	.0194	Oct. 26:			5:20 a. m.	.021	.0226
12:34 p. m.	.031	.0335	8:30 a. m. ²	0	0	5:25 a. m.	.013	.0140
12:35 p. m.	.046	.0496	8:35 a. m.	.001	.0011	5:30 a. m.	.008	.0086
12:36 p. m.	.063	.0680	8:37 a. m.	.010	.0113	5:40 a. m.	.006	.0065
12:38 p. m.	.077	.0831	8:39 a. m.	.031	.0335	5:50 a. m.	.004	.0043
12:40 p. m.	.072	.0777	8:40 a. m.	.054	.0583	6:00 a. m.	0	0
12:42 p. m.	.054	.0583	8:41 a. m.	.087	.0940	9:25 a. m.	0	0
12:45 p. m.	.034	.0372	8:42 a. m.	.125	.135	9:30 a. m.	.004	.0043
12:46 p. m.	.031	.0335	8:43 a. m.	.18	.194	9:35 a. m.	.008	.0086
12:48 p. m.	.046	.0496	8:44 a. m.	.20	.216	9:37 a. m.	.018	.0194
12:49 p. m.	.072	.0777	8:45 a. m.	.19	.205	9:40 a. m. ³	.024	.0259
12:50 p. m.	.103	.111	8:46 a. m.	.137	.148	9:44 a. m.	.0345	.0372
12:51 p. m.	.137	.148	8:47 a. m.	.092	.0994	9:45 a. m.	.031	.0335
12:53 p. m.	.26	.281	8:49 a. m.	.063	.0680	9:50 a. m.	.024	.0259
12:55 p. m.	.41	.443	8:50 a. m.	.038	.0410	9:55 a. m.	.0155	.0167
12:56 p. m.	.56	.605	8:52 a. m.	.024	.0259	10:00 a. m.	.0105	.0113
12:57 p. m.	.67	.723	8:54 a. m.	.024	.0259	10:20 a. m.	.006	.0065
1:00 p. m.	.61	.658				10:40 a. m.	.004	.0043
1:02 p. m.	.56	.605				11:00 a. m.	0	0
1:05 p. m.	.52	.561						

² Rain began, shower on Oct. 25 caused no run-off.³ Rain ended.

TABLE 92.—Run-off from watershed 135 for selected storms, 1939

[Area 2.69 acres; rainfall measured at recording rain gage 100]

Date and time	Discharge ¹	Accumulated run-off	Date and time	Discharge ¹	Accumulated run-off	Date and time	Discharge ¹	Accumulated run-off
STORM OF JUNE 18-19, TOTAL RAINFALL 2.57 INCHES			STORM OF JULY 8, TOTAL RAINFALL 2.52 INCHES—Continued			STORM OF JULY 8, TOTAL RAINFALL 2.52 INCHES—Continued		
June 18:	Sec.-ft.	In. per hr.	July 8—Con.	Sec.-ft.	In. per hr.	July 8—Con.	Sec.-ft.	In. per hr.
12:27 p. m.	0	0	7:48 a. m.	0.004	0.0015	12:49 p. m.	0.004	0.0015
12:28 p. m.	.010	.0037	7:50 a. m.	.019	.0070	12:50 p. m.	.0145	.0053
12:30 p. m.	.014	.0053	7:51 a. m.	.042	.0155	12:51 p. m.	.0145	.0053
12:35 p. m.	.014	.0053	7:52 a. m.	.070	.0258	12:52 p. m.	.042	.0155
12:40 p. m.	.010	.0037	7:55 a. m.	.102	.0375	12:53 p. m.	.086	.0316
1:00 p. m.	.004	.0015	8:00 a. m.	.159	.0585	12:54 p. m.	.120	.0441
1:30 p. m.	0	0	8:04 a. m.	.212	.0780	12:55 p. m.	.159	.0585
			8:05 a. m.	.201	.0739	12:57 p. m.	.246	.0905
			8:10 a. m.	.120	.0441	1:00 p. m.	.345	.127
			8:12 a. m.	.102	.0375	1:01 p. m.	.345	.127
			8:15 a. m.	.120	.0441	1:02 p. m.	.49	.180
			8:18 a. m.	.086	.0316	1:03 p. m.	.68	.250
			8:20 a. m.	.070	.0258	1:05 p. m.	.88	.324
			8:23 a. m.	.042	.0155	1:06 p. m.	.90	.331
			8:25 a. m. ²	.030	.0110	1:10 p. m.	.77	.283
			8:30 a. m.	.010	.0037	1:15 p. m.	.58	.213
			8:35 a. m.	.004	.0015	1:20 p. m.	.35	.129
			8:40 a. m.	.002	.0007	1:25 p. m.	.201	.0740
			8:50 a. m.	0	0	1:30 p. m.	.120	.0441
			12:26 p. m. ²	0	0	1:35 p. m.	.070	.0258
			12:32 p. m.	0	0	1:40 p. m.	.036	.0132
			12:35 p. m.	.010	.0037	1:45 p. m.	.019	.0070
			12:36 p. m.	.010	.0037	1:50 p. m.	.010	.0037
			12:37 p. m.	.042	.0155	2:00 p. m.	.004	.0015
			12:40 p. m.	.0245	.0090	2:30 p. m.	0	0
			12:45 p. m.	.007	.0026	3:00 p. m. ³	0	0

¹ Observed flow without corrections for base flow.² Rain began.³ Rain ended.

TABLE 92.—Run-off from watershed 135 for selected storms, 1939—Continued

Date and time		Discharge		Accumulated run-off	Date and time		Discharge		Accumulated run-off	Date and time		Discharge		Accumulated run-off
STORM OF OCT. 25-27, TOTAL RAINFALL 3.85 INCHES					STORM OF OCT. 25-27, TOTAL RAINFALL 3.85 INCHES—Continued					STORM OF OCT. 25-27, TOTAL RAINFALL 3.85 INCHES—Continued				
Oct. 26: ⁴		Sec.-ft.	In. per hr.	In.	Oct. 26—Con.		Sec.-ft.	In. per hr.	In.	Oct. 27—Con.		Sec.-ft.	In. per hr.	In.
8:35 a. m. ¹ -----		0	0	0	8:55 a. m.-----		0.086	0.0316	0.0248	5:00 a. m.-----		0.0245	0.0090	0.0275
8:40 a. m.-----		0	0	0	8:57 a. m.-----		.055	.0202	.0256	5:05 a. m.-----		.036	.0132	.0284
8:41 a. m.-----		.120	.0441	.0004	9:00 a. m.-----		.0245	.0090	.0263	5:10 a. m.-----		.019	.0070	.0292
8:43 a. m.-----		.246	.0905	.0026	9:05 a. m.-----		.007	.0026	.0268	5:15 a. m.-----		.010	.0037	.0296
8:44 a. m.-----		.37	.1361	.0045	9:10 a. m.-----		.002	.0007	.0269	5:20 a. m.-----		.004	.0015	.0298
8:45 a. m.-----		.46	.1692	.0070	9:30 a. m.-----		0	0	.0270	5:40 a. m.-----		0	0	.0301
8:46 a. m.-----		.475	.1748	.0099	12:10 p. m. ³ -----		0	0		9:35 a. m.-----		0	0	.0301
8:49 a. m.-----		.35	.1288	.0175	Oct. 27:					9:40 a. m.-----		.010	.0037	.0302
8:50 a. m.-----		.294	.1082	.0195	4:00 a. m. ² -----		0	0		9:50 a. m.-----		.004	.0015	.0306
8:52 a. m.-----		.179	.0659	.0224	4:54 a. m.-----		0	0	.0270	10:00 a. m.-----		0	0	.0307
8:54 a. m.-----		.120	.0441	.0242	4:55 a. m.-----		.010	.0037	.0270	2:00 p. m. ³ -----		0	0	.0307

¹ Rain began.² Rain ended.⁴ Showers Oct. 25, no run-off.

TABLE 93.—Run-off from watershed 188 for selected storms, 1939

[Area 2.06 acres; rainfall measured at recording rain gage 115]

Date and time		Discharge ¹		Accumulated run-off	Date and time		Discharge ¹		Accumulated run-off	Date and time		Discharge ¹		Accumulated run-off
STORM OF OCT. 25-27; TOTAL RAINFALL 3.63 INCHES					STORM OF OCT. 25-27; TOTAL RAINFALL 3.63 INCHES—Continued					STORM OF OCT. 25-27; TOTAL RAINFALL 3.63 INCHES—Continued				
Oct. 25:		Sec.-ft.	In. per hr.	In.	Oct. 26—Con.		Sec.-ft.	In. per hr.	In.	Oct. 27—Con.		Sec.-ft.	In. per hr.	In.
1:10 p. m. ¹ -----		0	0	0	9:17 a. m.-----		0.0348	0.0167	0.4218	7:05 a. m.-----		0.0143	0.0069	0.9912
6:10 p. m.-----		0	0	0	9:20 a. m.-----		.0186	.0089	.4224	7:10 a. m.-----		.0105	.0050	.9917
6:15 p. m.-----		.0021	.0010	0	9:25 a. m.-----		.0073	.0035	.4229	7:15 a. m.-----		.0073	.0035	.9921
6:25 p. m.-----		.0021	.0010	.0002	9:30 a. m.-----		.0021	.0010	.4231	7:45 a. m.-----		.0045	.0022	.9935
6:30 p. m.-----		.0045	.0022	.0003	9:40 a. m.-----		0	0	.4232	7:50 a. m.-----		.0073	.0035	.9937
6:31 p. m.-----		.0105	.0050	.0004	Oct. 27:					7:55 a. m.-----		.0105	.0050	.9941
6:32 p. m.-----		.0234	.0112	.0005	3:52 a. m. ² -----		0	0		7:57 a. m.-----		.0234	.0112	.9981
6:33 p. m.-----		.0407	.0196	.0007	4:03 a. m.-----		0	0	.4232	7:58 a. m.-----		.0686	.0330	.9985
6:35 p. m.-----		.0086	.0330	.0015	4:04 a. m.-----		.0686	.0330	.4234	7:59 a. m.-----		.145	.0697	.9994
6:37 p. m.-----		.134	.0644	.0031	4:05 a. m.-----		.347	.167	.4250	8:00 a. m.-----		.181	.0871	1.0007
6:40 p. m.-----		.181	.0871	.0069	4:06 a. m.-----		.621	.299	.4289	8:03 a. m.-----		.145	.0697	1.0046
6:45 p. m.-----		.145	.0679	.0134	4:07 a. m.-----		.805	.387	.4346	8:04 a. m.-----		.1033	.0497	1.0055
6:47 p. m.-----		.113	.0544	.0155	4:09 a. m.-----		.892	.429	.4482	8:05 a. m.-----		.0767	.0369	1.0062
6:50 p. m.-----		.0767	.0369	.0177	4:10 a. m.-----		.862	.415	.4552	8:07 a. m.-----		.0538	.0259	1.0072
6:55 p. m.-----		.0471	.0226	.0202	4:13 a. m.-----		.749	.360	.4746	8:10 a. m.-----		.0348	.0167	1.0082
7:00 p. m.-----		.0186	.0089	.0215	4:15 a. m.-----		.621	.299	.4856	8:15 a. m.-----		.0186	.0089	1.0092
7:10 p. m.-----		.0073	.0035	.0220	4:17 a. m.-----		.527	.254	.4949	8:18 a. m.-----		.0143	.0069	1.0096
7:20 p. m.-----		.0045	.0022	.0222	4:20 a. m.-----		.403	.194	.5061	8:20 a. m.-----		.0234	.0112	1.0099
7:30 p. m. ³ -----		0	0	.0224	4:25 a. m.-----		.264	.127	.5195	8:21 a. m.-----		.0348	.0167	1.0101
10:30 p. m. ² -----		0	0		4:30 a. m.-----		.168	.0808	.5281	8:22 a. m.-----		.0686	.0330	1.0105
10:43 p. m.-----		0	0		4:35 a. m.-----		.113	.0544	.5337	8:23 a. m.-----		.123	.0592	1.0112
10:44 p. m.-----		.0143	.0069	.0225	4:37 a. m.-----		.0940	.0452	.5353	8:24 a. m.-----		.207	.0996	1.0125
10:45 p. m.-----		.0407	.0196	.0227	4:39 a. m.-----		.123	.0592	.5370	8:25 a. m.-----		.235	.113	1.0142
10:47 p. m.-----		.0767	.0369	.0236	4:40 a. m.-----		.156	.0750	.5381	8:27 a. m.-----		.249	.120	1.0181
10:50 p. m.-----		.0940	.0452	.0256	4:41 a. m.-----		.220	.106	.5396	8:30 a. m.-----		.193	.0928	1.0234
10:55 p. m.-----		.0767	.0369	.0290	4:42 a. m.-----		.296	.142	.5417	8:31 a. m.-----		.156	.0750	1.0248
11:00 p. m.-----		.0538	.0259	.0316	4:43 a. m.-----		.384	.185	.5444	8:33 a. m.-----		.0767	.0369	1.0266
11:05 p. m.-----		.0348	.0167	.0334	4:44 a. m.-----		.527	.254	.5480	8:35 a. m.-----		.0538	.0259	1.0271
11:10 p. m.-----		.0186	.0089	.0344	4:45 a. m.-----		.671	.323	.5528	8:39 a. m.-----		.0407	.0196	1.0286
11:15 p. m.-----		.0105	.0050	.0349	4:47 a. m.-----		1.02	.491	.5664	8:40 a. m.-----		.0471	.0226	1.0289
11:20 p. m.-----		.0045	.0022	.0352	4:48 a. m.-----		1.19	.572	.5753	8:42 a. m.-----		.0686	.0330	1.0298
11:30 p. m.-----		.0021	.0010	.0354	4:50 a. m.-----		1.33	.640	.5955	8:43 a. m.-----		.0940	.0452	1.0304
11:40 p. m.-----		0	0	.0355	4:55 a. m.-----		1.45	.697	.6512	8:45 a. m.-----		.145	.0697	1.0323
Oct. 26:					4:58 a. m.-----		1.37	.659	.6851	8:47 a. m.-----		.134	.0644	1.0344
2:05 a. m. ³ -----		0	0		5:00 a. m.-----		1.49	.717	.7080	8:50 a. m.-----		.1033	.0497	1.0372
8:25 a. m. ¹ -----		0	0		5:01 a. m.-----		1.65	.794	.7206	8:55 a. m.-----		.123	.0592	1.0417
8:40 a. m.-----		0	0	.0355	5:03 a. m.-----		2.01	.967	.7499	8:57 a. m.-----		.134	.0644	1.0438
8:41 a. m.-----		.0021	.0010	.0355	5:05 a. m.-----		2.11	1.02	.7829	8:59 a. m.-----		.156	.0750	1.0461
8:42 a. m.-----		.207	.0996	.0363	5:10 a. m.-----		1.78	.856	.8650	9:00 a. m.-----		.156	.0750	1.0473
8:43 a. m.-----		.777	.374	.0402	5:12 a. m.-----		1.45	.697	.8908	9:02 a. m.-----		.113	.0544	1.0494
8:44 a. m.-----		1.45	.697	.0491	5:15 a. m.-----		1.02	.491	.9205	9:04 a. m.-----		.0686	.0330	1.0501
8:45 a. m.-----		2.16	1.04	.0635	5:17 a. m.-----		.862	.415	.9356	9:05 a. m.-----		.0538	.0259	1.0506
8:46 a. m.-----		2.74	1.32	.0831	5:19 a. m.-----		.645	.310	.9477	9:08 a. m.-----		.0348	.0167	1.0516
8:47 a. m.-----		3.16	1.52	.1067	5:20 a. m.-----		.573	.276	.9526	9:10 a. m.-----		.0234	.0112	1.0520
8:48 a. m.-----		3.48	1.67	.1333	5:22 a. m.-----		.463	.223	.9609	9:15 a. m.-----		.0105	.0050	1.0527
8:50 a. m.-----		3.22	1.55	.1870	5:25 a. m.-----		.347	.167	.9706	9:20 a. m.-----		.0073	.0035	1.0531
8:52 a. m.-----		2.92	1.40	.2362	5:27 a. m.-----		.280	.135	.9756	9:23 a. m.-----		.0186	.0089	1.0534
8:53 a. m.-----		2.69	1.29	.2588	5:29 a. m.-----		.193	.0928	.9794	9:24 a. m.-----		.0288	.0138	1.0536
8:55 a. m.-----		2.11	1.02	.2973	5:30 a. m.-----		.145	.0697	.9808	9:25 a. m.-----		.0610	.0293	1.0540
8:57 a. m.-----		1.74	.837	.3281	5:33 a. m.-----		.113	.0544	.9839	9:26 a. m.-----		.103	.0497	1.0546
8:58 a. m.-----		1.49	.717	.3410	5:35 a. m.-----		.0851	.0409	.9855	9:27 a. m.-----		.181	.0871	1.0557
9:00 a. m. ³ -----		1.15	.553	.3621	5:37 a. m.-----		.0538	.0259	.9866	9:28 a. m.-----		.264	.127	1.0575
9:02 a. m.-----		.922	.444	.3787	5:40 a. m.-----		.0407	.0196	.9877	9:29 a. m.-----		.403	.194	1.0602
9:04 a. m.-----		.671	.323	.3915	5:45 a. m.-----		.0234	.0112	.9890	9:30 a. m.-----		.645	.310	1.0644
9:05 a. m.-----		.573	.276	.3964	5:50 a. m.-----		.0105	.0050	.9897	9:31 a. m.-----		.833	.401	1.0703
9:06 a. m.-----		.484	.233	.4049	5:55 a. m.-----		.0021	.0010	.9900	9:32 a. m.-----		1.02	.491	1.0777
9:08 a. m.-----		.330	.159	.4114	6:00 a. m.-----		0	0	.9900	9:34 a. m.-----		1.15	.553	1.0951
9:10 a. m.-----		.220	.106	.4158	6:50 a. m.-----		0	0	.9900	9:35 a. m.-----		1.12	.539	1.1042
9:11 a. m.-----		.181	.0871	.4174	6:52 a. m.-----		.0073	.0035	.9901	9:37 a. m.-----		1.02	.491	1.1197
9:13 a. m.-----		.113	.0544	.4197	6:55 a. m.-----		.0073	.0035	.9903	9:39 a. m.-----		.833	.401	1.1345
9:15 a. m.-----		.0610	.0293	.4210	7:00 a. m.-----		.0105	.0050	.9907	9:40 a. m.-----		.749	.360	1.1408

¹ Observed flow without corrections for base flow.² Rain began.³ Rain ended.

TABLE 93.—Run-off from watershed 188 for selected storms, 1939—Continued

Date and time		Discharge		Accumulated run-off	Date and time		Discharge		Accumulated run-off	Date and time		Discharge		Accumulated run-off
STORM OF OCT. 25-27, TOTAL RAINFALL 3.63 INCHES—Continued					STORM OF OCT. 25-27, TOTAL RAINFALL 3.63 INCHES—Continued					STORM OF OCT. 25-27, TOTAL RAINFALL 3.63 INCHES—Continued				
Oct. 27—Con.		Sec.-ft.	In. per hr.	In.	Oct. 27—Con.		Sec.-ft.	In. per hr.	In.	Oct. 27—Con.		Sec.-ft.	In. per hr.	In.
9:42 a. m.-----		0.596	0.287	1.1516	10:30 a. m.-----		0	0	1.1699	1:52 p. m.-----		0.330	0.159	1.2301
9:43 a. m.-----		.463	.223	1.1558	12:00 m. ³ -----		0	0		1:53 p. m.-----		.249	.120	1.2326
9:44 a. m.-----		.347	.167	1.1590	1:38 p. m.-----		0	0		1:54 p. m.-----		.145	.0697	1.2340
9:45 a. m.-----		.280	.135	1.1615	1:39 p. m.-----		.0186	.0089	1.1700	1:55 p. m.-----		.0610	.0293	1.2348
9:46 a. m.-----		.220	.106	1.1635	1:40 p. m.-----		.0610	.0293	1.1703	1:57 p. m.-----		.0348	.0167	1.2356
9:47 a. m.-----		.113	.0544	1.1648	1:41 p. m.-----		.280	.135	1.1717	2:00 p. m.-----		.0234	.0112	1.2363
9:48 a. m.-----		.0538	.0259	1.1655	1:42 p. m.-----		.621	.299	1.1753	2:05 p. m.-----		.0143	.0069	1.2371
9:50 a. m.-----		.0348	.0167	1.1662	1:43 p. m.-----		.862	.415	1.1812	2:10 p. m.-----		.0186	.0089	1.2377
9:55 a. m.-----		.0234	.0112	1.1674	1:44 p. m.-----		.922	.444	1.1883	2:20 p. m.-----		.0105	.0050	1.2388
10:00 a. m.-----		.0186	.0089	1.1682	1:47 p. m.-----		.749	.360	1.2084	2:30 p. m.-----		.0021	.0010	1.2393
10:10 a. m.-----		.0105	.0050	1.1693	1:50 p. m.-----		.505	.243	1.2235	2:50 p. m.-----		0	0	1.2395
10:20 a. m.-----		.0021	.0010	1.1698										

³ Rain ended.

TABLE 94.—Run-off from watershed 191 for selected storms, 1939

[Area 1.08 acres; rainfall measured at recording rain gage 115]

Date and time		Discharge ¹		Accumulated run-off		Date and time		Discharge ¹		Accumulated run-off							
STORM OF OCT. 25-27, TOTAL RAINFALL 3.63 INCHES						STORM OF OCT. 25-27, TOTAL RAINFALL 3.63 INCHES—Continued						STORM OF OCT. 25-27, TOTAL RAINFALL 3.63 INCHES—Continued					
Oct. 25:		Sec.-ft.	In. per hr.	In.		Oct. 26—Con.		Sec.-ft.	In. per hr.	In.		Oct. 27—Con.		Sec.-ft.	In. per hr.	In.	
1:10 p. m. ²		0	0	0		9:30 a. m.		0.0039	0.0036	0.3453		8:00 a. m.		0	0	0.7744	
6:34 p. m.		0	0	0		9:40 a. m.		0	0	.3456		8:10 a. m.		.0023	.0021	.7745	
6:35 p. m.		.0057	.0052	0		Oct. 27:						8:20 a. m.		.0039	.0036	.7750	
6:36 p. m.		.0078	.0071	.0001		3:52 a. m. ²		0	0			8:22 a. m.		.0057	.0052	.7751	
6:37 p. m.		.0415	.0380	.0005		4:03 a. m.		0	0			8:23 a. m.		.0164	.0150	.7753	
6:38 p. m.		.0932	.0854	.0015		4:05 a. m.		.0023	.0021	.3456		8:24 a. m.		.0365	.0334	.7757	
6:39 p. m.		.110	.100	.0031		4:06 a. m.		.110	.100	.3464		8:25 a. m.		.0645	.0591	.7765	
6:40 p. m.		.101	.0928	.0047		4:07 a. m.		.436	.399	.3505		8:26 a. m.		.0782	.0716	.7776	
6:43 p. m.		.0712	.0652	.0087		4:08 a. m.		.559	.512	.3581		8:30 a. m.		.0467	.0428	.7814	
6:45 p. m.		.0467	.0428	.0105		4:09 a. m.		.455	.417	.3659		8:35 a. m.		.0365	.0334	.7846	
6:50 p. m.		.0200	.0183	.0130		4:10 a. m.		.399	.366	.3724		8:40 a. m.		.0365	.0334	.7874	
6:55 p. m.		.0057	.0052	.0140		4:12 a. m.		.299	.274	.3830		9:00 a. m.		.0365	.0334	.7985	
7:00 p. m.		.0011	.0010	.0142		4:13 a. m.		.242	.222	.3871		9:15 a. m.		.0319	.0292	.8063	
7:10 p. m.		0	0	.0143		4:15 a. m.		.180	.165	.3937		9:25 a. m.		.0276	.0253	.8108	
10:40 p. m.		0	0	.0143		4:17 a. m.		.147	.135	.3986		9:26 a. m.		.0276	.0253	.8112	
10:44 p. m.		.0039	.0036	.0144		4:20 a. m.		.101	.0928	.4043		9:27 a. m.		.0365	.0334	.8117	
10:45 p. m.		.0023	.0021	.0144		4:25 a. m.		.0712	.0652	.4109		9:28 a. m.		.0932	.0854	.8127	
10:50 p. m.		0	0	.0146		4:30 a. m.		.0467	.0428	.4154		9:29 a. m.		.270	.247	.8155	
10:51 p. m.		.0103	.0094	.0147		4:35 a. m.		.0467	.0428	.4189		9:30 a. m.		.559	.512	.8218	
10:52 p. m.		.0276	.0253	.0150		4:40 a. m.		.0523	.0479	.4227		9:32 a. m.		.803	.736	.8404	
10:54 p. m.		.0415	.0380	.0160		4:41 a. m.		.0712	.0652	.4236		9:33 a. m.		.725	.664	.8520	
10:55 p. m.		.0365	.0334	.0166		4:42 a. m.		.0932	.0854	.4248		9:34 a. m.		.581	.532	.8619	
11:00 p. m.		.0237	.0217	.0189		4:43 a. m.		.158	.145	.4267		9:35 a. m.		.495	.453	.8701	
11:05 p. m.		.0103	.0094	.0202		4:44 a. m.		.270	.247	.4300		9:36 a. m.		.399	.366	.8769	
11:10 p. m.		.0057	.0052	.0208		4:45 a. m.		.417	.382	.4352		9:37 a. m.		.315	.288	.8823	
11:15 p. m.		.0023	.0021	.0211		4:46 a. m.		.603	.552	.4430		9:38 a. m.		.242	.222	.8866	
11:20 p. m.		.0011	.0010	.0212		4:47 a. m.		.699	.640	.4528		9:40 a. m.		.158	.145	.8927	
11:30 p. m.		0	0	.0213		4:49 a. m.		.859	.787	.4766		9:41 a. m.		.118	.108	.8948	
Oct. 26:						4:50 a. m.		.803	.736	.4893		9:43 a. m.		.0712	.0652	.8977	
2:05 a. m. ³		0	0			4:51 a. m.		.725	.664	.5009		9:45 a. m.		.0365	.0334	.8993	
8:25 a. m. ²		0	0	.0213		4:55 a. m.		.675	.618	.5437		9:47 a. m.		.0237	.0217	.9002	
8:42 a. m.		0	0	.0213		4:56 a. m.		.627	.574	.5536		9:50 a. m.		.0131	.0120	.9010	
8:43 a. m.		.0712	.0652	.0218		4:58 a. m.		.537	.492	.5713		9:55 a. m.		.0057	.0052	.9017	
8:44 a. m.		.475	.485	.0259		5:00 a. m.		.650	.595	.5861		10:00 a. m.		.0011	.0010	.9019	
8:45 a. m.		.803	.734	.0357		5:01 a. m.		.887	.812	.5974		10:10 a. m.		0	0	.9020	
8:46 a. m.		.946	.866	.0490		5:02 a. m.		1.14	1.04	.6128		12:00 m. ³		0	0		
8:47 a. m.		3.04	2.78	.0794		5:03 a. m.		1.20	1.10	.6306		1:27 p. m. ²		0	0		
8:48 a. m.		3.55	3.25	.1297		5:04 a. m.		1.14	1.04	.6484		1:39 p. m.		0	0	.9020	
8:49 a. m.		2.81	2.57	.1783		5:05 a. m.		.976	.894	.6645		1:40 p. m.		.0319	.0292	.9022	
8:50 a. m.		2.01	1.84	.2162		5:07 a. m.		.803	.736	.6916		1:41 p. m. ³		.284	.260	.9046	
8:51 a. m.		1.42	1.30	.2423		5:08 a. m.		.650	.595	.7026		1:42 p. m.		.650	.595	.9117	
8:52 a. m.		1.01	.922	.2608		5:10 a. m.		.455	.417	.7194		1:43 p. m.		.675	.618	.9218	
8:53 a. m.		.803	.734	.2746		5:12 a. m.		.364	.333	.7319		1:44 p. m.		.364	.333	.9297	
8:54 a. m.		.603	.552	.2853		5:13 a. m.		.270	.247	.7367		1:45 p. m.		.270	.247	.9345	
8:55 a. m.		.516	.473	.2938		5:15 a. m.		.180	.165	.7436		1:46 p. m.		.203	.186	.9381	
8:57 a. m.		.399	.366	.3075		5:18 a. m.		.118	.108	.7504		1:48 p. m.		.128	.117	.9431	
8:58 a. m.		.347	.318	.3132		5:20 a. m.		.0855	.0783	.7535		1:50 p. m.		.0855	.0783	.9463	
8:59 a. m.		.270	.247	.3179		5:25 a. m.		.0782	.0716	.7597		1:52 p. m.		.0467	.0428	.9483	
9:00 a. m. ³		.216	.198	.3216		5:30 a. m.		.0583	.0534	.7649		1:55 p. m.		.0237	.0217	.9499	
9:01 a. m.		.180	.165	.3246		5:35 a. m.		.0415	.0380	.7687		1:56 p. m.		.0200	.0183	.9502	
9:02 a. m.		.147	.135	.3270		5:40 a. m.		.0276	.0253	.7713		2:00 p. m.		.0131	.0120	.9512	
9:05 a. m.		.101	.0928	.3327		5:45 a. m.		.0164	.0150	.7730		2:20 p. m.		.0078	.0071	.9544	
9:10 a. m.		.0583	.0534	.3388		5:50 a. m.		.0078	.0071	.7739		2:40 p. m.		.0039	.0036	.9562	
9:15 a. m.		.0319	.0292	.3420		5:55 a. m.		.0023	.0021	.7743		3:00 p. m.		.0011	.0010	.9570	
9:20 a. m.		.0164	.0150	.3438		6:00 a. m.		0	0	.7744		3:20 p. m.		0	0	.9571	
9:25 a. m.		.0103	.0094	.3448													

¹ Observed flow without corrections for base flow.² Rain began.³ Rain ended.

TABLE 95.—Run-off from Lysimeter battery Y101, boxes A, B, and C, for selected storms, 1939

Date and time	Time interval	Average discharge rate during time interval	Accumulated run-off	Date and time	Time interval	Average discharge rate during time interval	Accumulated run-off	Date and time	Time interval	Average discharge rate during time interval	Accumulated run-off
STORM OF FEB. 14-15, BOX A				STORM OF JUNE 18-19, BOX C				STORM OF OCT. 25-27, BOX B			
Feb. 14:				June 18:				Oct. 25:			
8:30 p. m. ¹			0	7:30 a. m. ¹			0	12:23 a. m. ¹			0
Feb. 15:				June 19:			.012	2:45 p. m. ²	142	0	0
2:30 a. m. ¹	240	0	0	8:50 a. m. ³	(⁴)			4:00 p. m.	75	.005	.006
3:30 a. m.	60	.0060	.006					4:30 p. m.	30	.012	.012
4:30 a. m.	60	.0060	.012					5:30 p. m.	60	.006	.018
6:30 a. m.	120	.0030	.018	STORM OF JULY 8, BOX A				Oct. 26:			
7:30 a. m.	60	.0060	.024	July 8:				8:36 a. m.	906	0	.018
10:20 a. m. ³	170			5:05 a. m. ¹			0	8:40 a. m.	4	.270	.036
2:30 p. m.	250	.0014	.030	7:55 a. m. ²	170	0	0	8:44 a. m.	4	.720	.084
6:30 p. m. ⁴	240	.0015	.036	8:00 a. m.	5	.072	.006	8:56 a. m.	12	.030	.090
STORM OF FEB. 14-15, BOX B				12:53 p. m.	21	0	.006	Oct. 27:			
Feb. 14:				12:58 p. m.	5	.072	.012	4:46 a. m.	1190	0	.090
8:30 p. m. ¹			0	1:30 p. m.	32	.011	.018	4:58 a. m.	12	.060	.102
Feb. 15:				2:10 p. m. ³	40	.009	.024	5:00 a. m.	2	.180	.108
10:20 a. m. ³	(⁴)	0	.006	2:40 p. m.	30	.012	.030	5:06 a. m.	6	.060	.114
STORM OF FEB. 14-15, BOX C				5:00 p. m. ⁴	20	.018	.036	10:06 a. m. ³	300	.001	.120
[No run-off]								6:00 p. m. ⁴	474	0	.120
STORM OF JUNE 18-19, BOX A				STORM OF JULY 8, BOX B				STORM OF OCT. 25-26, BOX C			
June 18:				July 8:				Oct. 25:			
7:30 a. m. ¹			0	5:05 a. m. ¹			0	12:23 a. m. ¹			0
June 19:				5:15 a. m.	15	0	0	7:20 a. m. ²	417	0	0
1:30 a. m. ²	1080	0	0	5:21 a. m.	6	.060	.006	8:20 a. m.	60	.006	.006
3:30 a. m.	120	.0030	.006	7:42 a. m.	141	0	.006	10:00 a. m.	100	.004	.012
6:00 a. m.	150	.0024	.012	8:02 a. m.	20	.018	.012	2:00 p. m.	240	0	.012
8:50 a. m. ³	170	.0031	.018	12:34 p. m.	2	0	.012	2:30 p. m.	30	.012	.018
STORM OF JUNE 18-19, BOX B				1:04 p. m. ⁴	30	.012	.018	2:50 p. m.	20	.018	.024
June 18:				2:10 p. m. ³	66	0	.018	4:10 p. m.	80	.005	.030
7:30 a. m. ¹			0	STORM OF JULY 8, BOX C				7:30 p. m.	200	.002	.035
June 19:				July 8:				8:00 p. m.	30	.002	.036
1:30 a. m. ²	1080	0	0	5:05 a. m. ¹			0	Oct. 26:			
3:30 a. m.	120	.0030	.006	7:52 a. m. ²	167	0	0	8:35 a. m.	755	0	.036
6:00 a. m.	150	.0024	.012	7:53 a. m.	1	.360	.006	8:40 a. m.	5	.144	.048
8:50 a. m. ³	170	.0031	.018	7:59 a. m.	6	.060	.012	8:44 a. m.	4	.180	.060
STORM OF JUNE 18-19, BOX C				12:33 p. m.	281	0	.012	Oct. 27:			
June 18:				12:53 p. m.	20	.018	.018	4:40 a. m.	1196	0	.060
7:30 a. m. ¹			0	12:58 p. m. ⁴	5	.144	.030	5:00 a. m.	20	.018	.066
June 19:				2:10 p. m. ³	132	0	.030	5:10 a. m.	10	.036	.072
8:50 a. m. ³	(⁴)		.012	STORM OF OCT. 25-27, BOX A				9:30 a. m.	260	0	.072
[No run-off]								9:50 a. m.	20	.018	.078

¹ Rai began. ² Run-off began. ³ Rain ended. ⁴ Run-off ended. ⁵ Record unsatisfactory for determining exact time run-off began and ended.

TABLE 96.—Run-off from Lysimeter battery Y102, for selected storms, 1939

Date and time	Time interval	Average discharge rate during time interval	Accumulated run-off	Date and time	Time interval	Average discharge rate during time interval	Accumulated run-off	Date and time	Time interval	Average discharge rate during time interval	Accumulated run-off
STORM OF FEB. 14-15, BOX A				STORM OF FEB. 14-15, BOX B				STORM OF FEB. 14-15, BOX C			
Feb. 14:				Feb. 14:				Feb. 14:			
8:30 p. m. ¹			0	8:30 p. m. ¹			0	8:30 p. m. ¹			0
Feb. 15:				Feb. 15:				Feb. 15:			
1:30 a. m. ²	300	0	0	1:30 a. m. ²	300	0	0	1:30 a. m. ²	290	0	0
1:42 a. m.	12	.060	.012	1:42 a. m.	12	.030	.006	1:30 a. m.	10	.072	.012
1:46 a. m.	4	.090	.018	1:54 a. m.	12	.030	.012	1:35 a. m.	5	.144	.024
1:50 a. m.	4	.180	.030	2:06 a. m.	12	.030	.018	1:45 a. m.	10	.108	.042
1:55 a. m.	5	.072	.036	2:18 a. m.	12	.030	.024	1:46 a. m.	1	.360	.048
2:01 a. m.	6	.120	.048	2:30 a. m. ³	12	.030	.030	1:50 a. m.	4	.180	.060
2:16 a. m.	15	.072	.066	2:40 a. m.	10	.072	.042	1:55 a. m.	5	.144	.072
2:20 a. m.	4	.180	.078	2:55 a. m.	15	.048	.054	2:00 a. m.	5	.144	.084
2:30 a. m. ³	10	.108	.096	3:01 a. m.	6	.060	.060	2:05 a. m.	5	.144	.096
2:40 a. m.	10	.144	.120	3:07 a. m. ⁴	6	.060	.066	2:10 a. m.	5	.072	.102
2:50 a. m.	10	.144	.132					2:15 a. m.	5	.144	.114
3:00 a. m.	10	.144	.144					2:17 a. m.	2	.180	.120
3:10 a. m.	10	.036	.150					2:20 a. m.	3	.240	.132
3:25 a. m. ⁴	15	.024	.156					2:23 a. m.	3	.360	.144
								2:25 a. m.	2	.180	.150

¹ Rain began.

² Run-off began.

³ Rain changed to snow.

⁴ Run-off ended.

TABLE 96.—Run-off from Lysimeter battery Y102, for selected storms, 1939—Continued

Date and time	Time interval	Average discharge rate during time interval	Accumulated run-off	Date and time	Time interval	Average discharge rate during time interval	Accumulated run-off	Date and time	Time interval	Average discharge rate during time interval	Accumulated run-off
STORM OF FEB. 14-15, BOX C—Continued				STORM OF JUNE 18-19, BOX B—Continued				STORM OF JUNE 18-19, BOX C—Continued			
Feb. 15—Con.	Min.	In. per hr.	In.	June 18—Con.	Min.	In. per hr.	In.	June 19:	Min.	In. per hr.	In.
2:30 a. m. ³	5	0.144	0.162	11:27 a. m.	9	0.238	0.354	12:03 a. m.	3	0.240	0.732
2:40 a. m.	10	.180	.192	11:28 a. m.	1	.720	.366	12:09 a. m.	6	.060	.738
2:50 a. m.	10	.144	.216	11:34 a. m.	6	.360	.402	12:13 a. m.	4	.360	.756
3:00 a. m.	10	.108	.234	11:38 a. m.	4	.360	.426	12:20 a. m.	7	.771	.846
3:10 a. m.	10	.036	.240	11:42 a. m.	4	.180	.438	12:25 a. m.	5	.288	.870
3:20 a. m. ⁴	10	.036	.246	11:43 a. m.	1	.720	.450	12:27 a. m.	2	1.080	.900
STORM OF JUNE 18-19, BOX A				11:47 a. m.	3	.120	.456	12:30 a. m.	3	.600	.936
June 18:				11:52 a. m.	6	.060	.462	12:36 a. m.	6	.600	.960
7:35 a. m. ¹			0	12:16 p. m.	24	0	.462	12:41 a. m.	5	.216	.978
8:51 a. m. ²	76		0	12:20 p. m.	4	.630	.504	12:49 a. m.	8	T	.978
8:53 a. m.	2	0.360	.012	12:24 p. m.	4	.270	.522	12:51 a. m.	2	.180	.984
9:03 a. m.	10	.036	.018	12:26 p. m.	2	.540	.540	12:53 a. m.	122	0	.984
9:04 a. m.	1	.360	.024	12:32 p. m.	6	.060	.546	3:05 a. m.	12	.030	.990
9:05 a. m.	1	.360	.030	6:45 p. m.	373	0	.546	3:15 a. m.	10	.108	1.008
10:28 a. m.	83	0	.030	6:50 p. m.	5	.144	.558	3:27 a. m.	12	.150	1.038
10:33 a. m.	5	.072	.036	6:54 p. m.	4	.360	.582	3:39 a. m.	12	.030	1.050
10:54 a. m.	21	T	.036	7:00 p. m.	6	.060	.588	4:20 a. m. ⁴	41	.009	1.056
11:00 a. m.	6	.120	.048	7:04 p. m.	4	.090	.594	8:30 a. m. ⁵	250	0	1.056
11:06 a. m.	6	.820	.120	7:10 p. m.	6	.060	.600				
11:10 a. m.	4	.540	.156	7:13 p. m.	3	.240	.612				
11:20 a. m.	10	.576	.252	9:37 p. m.	144	0	.612				
11:23 a. m.	3	.480	.276	9:47 p. m.	10	.036	.618				
11:24 a. m.	1	.360	.282	11:50 p. m.	123	0	.618				
11:28 a. m.	4	.720	.330	12:00 p. m.	10	.240	.648				
11:30 a. m.	2	.360	.342	June 19:							
11:36 a. m.	6	.240	.366	12:05 a. m.	5	.072	.654				
11:40 a. m.	4	.360	.390	12:15 a. m.	10	.072	.666				
11:50 a. m.	10	.108	.408	12:17 a. m.	2	.360	.678				
12:17 p. m.	27	0	.408	12:20 a. m.	3	1.080	.732				
12:20 p. m.	3	.720	.444	12:23 a. m.	3	.480	.756				
12:24 p. m.	4	.270	.462	12:26 a. m.	3	.240	.768				
12:26 p. m.	2	.540	.480	12:29 a. m.	3	.720	.804				
12:30 p. m.	4	.090	.486	12:33 a. m.	4	.450	.834				
6:45 p. m.	375	0	.486	12:44 a. m.	11	.162	.864				
6:50 p. m.	5	.072	.492	12:54 a. m.	10	.036	.870				
6:53 p. m.	3	.120	.498	1:33 a. m.	39	0	.870				
6:54 p. m.	1	.360	.504	1:34 a. m.	1	.360	.876				
6:56 p. m.	2	.540	.522	2:58 a. m.	84	0	.876				
7:01 p. m.	5	T	.522	3:12 a. m.	14	T	.876				
7:06 p. m.	5	.144	.534	3:26 a. m.	14	.103	.900				
7:12 p. m.	6	T	.534	3:29 a. m.	3	.240	.912				
7:14 p. m.	2	.360	.546	3:32 a. m.	3	.180	.918				
9:40 p. m.	146	0	.546	4:30 a. m.	58	.006	.924				
9:50 p. m.	10	.036	.552	7:40 a. m.	190	0	.924				
11:50 p. m.	120	0	.552	8:00 a. m. ⁴	20	.018	.930				
11:53 p. m.	3	.240	.564	STORM OF JUNE 18-19, BOX C							
11:57 p. m.	4	.090	.570	June 18:							
June 19:				7:35 a. m. ¹			0				
12:03 a. m.	6	.060	.576	8:50 a. m. ²	75	0	0				
12:04 a. m.	1	.360	.582	8:53 a. m.	3	.480	.024				
12:10 a. m.	6	.060	.588	9:03 a. m.	10	.036	.030				
12:14 a. m.	4	.180	.600	9:05 a. m.	2	.720	.054				
12:20 a. m.	6	.720	.672	9:44 a. m.	39	0	.054				
12:22 a. m.	2	.540	.690	10:24 a. m.	40	.009	.060				
12:25 a. m.	3	.360	.708	10:30 a. m.	6	.180	.078				
12:26 a. m.	1	.720	.720	10:35 a. m.	5	.072	.084				
12:27 a. m.	1	1.080	.738	10:52 a. m.	17	T	.084				
12:28 a. m.	1	1.440	.762	11:00 a. m.	8	.135	.102				
12:33 a. m.	5	.144	.774	11:06 a. m.	6	.540	.156				
12:39 a. m.	6	.180	.792	11:09 a. m.	3	.720	.192				
12:42 a. m.	3	.240	.804	11:10 a. m.	1	1.440	.216				
12:52 a. m.	10	.036	.810	11:13 a. m.	3	.600	.246				
3:00 a. m.	128	0	.810	11:19 a. m.	6	.720	.318				
3:15 a. m.	15	.024	.816	11:22 a. m.	3	.480	.342				
3:30 a. m.	15	.180	.861	11:25 a. m.	3	.600	.372				
4:00 a. m. ⁴	30	.006	.864	11:29 a. m.	4	.900	.432				
STORM OF JUNE 18-19, BOX B				11:31 a. m.	2	.360	.444				
June 18:				11:33 a. m.	2	.180	.450				
7:35 a. m. ¹			0	11:39 a. m.	6	.360	.486				
8:51 a. m. ²	76	0	.012	11:42 a. m.	3	.120	.492				
8:53 a. m.	2	.360	.012	11:45 a. m.	2	.360	.504				
9:03 a. m.	10	0	.012	11:50 a. m.	5	.144	.516				
9:04 a. m.	1	.720	.024	12:14 p. m.	24	0	.516				
9:07 a. m.	3	.120	.030	12:20 p. m.	6	.420	.558				
9:46 a. m.	39	0	.030	12:26 p. m.	6	.360	.594				
10:26 a. m.	40	.009	.036	6:43 p. m.	377	0	.594				
10:28 a. m.	2	.180	.042	6:51 p. m.	8	.180	.618				
10:34 a. m.	6	.060	.048	6:54 p. m.	3	.480	.642				
10:52 a. m.	18	0	.048	6:59 p. m.	5	T	.642				
11:00 a. m.	8	.080	.060	7:00 p. m.	1	.360	.648				
11:05 a. m.	5	.576	.108	7:03 p. m.	3	.120	.654				
11:06 a. m.	1	.360	.114	7:09 p. m.	6	.060	.660				
11:07 a. m.	1	1.080	.132	7:13 p. m.	4	.180	.672				
11:12 a. m.	5	.936	.210	9:35 p. m.	142	0	.672				
11:18 a. m.	6	.720	.282	9:36 p. m.	1	.002	.678				
1 Rain began.				9:44 p. m.	8	.045	.684				
2 Run-off began.				11:00 p. m.	76	.005	.690				
3 Rain changed to snow.				11:53 p. m.	53	0	.690				
4 Run-off ended.				12:00 p. m.	7	.258	.720				
5 Rain ended.											
				June 19:							
				5:11 a. m. ¹			0				0
				5:13 a. m. ²	2		0				0
				5:14 a. m.	1		1.440				.024
				5:15 a. m.	1		2.880				.072
				5:16 a. m.	1		2.880				.120
				5:17 a. m.	1		3.600				.180
				5:18 a. m.	1		3.600				.240
				5:19 a. m.	1		2.520				.282
				5:20 a. m.	1		1.440				.306
				5:21 a. m.	1		.360				.312
				5:22 a. m.	1		.180				.315
				5:24 a. m.	2		.090				.318
				7:40 a. m.	136	0	0				.318
				7:41 a. m.	1		2.520				.360
				7:42 a. m.	1		.720				.372
				7:43 a. m.	1		.720				.384
				7:44 a. m.	1		.720				.396
				7:48 a. m.	4		.090				.402
				7:49 a. m.	1		1.800				.432
				7:50 a. m.	1		2.880				.480
				7:51 a. m.	1		3.240				.534
				7:52 a. m.	1		1.080				.552
				7:53 a. m.	1		1.440				.576
				7:54 a. m.	1		2.880				.624
				7:55 a. m.	1		2.520				.666
				7:56 a. m.	1		3.240				.720
				7:57 a. m.	1		2.160				.756
				7:58 a. m.	1		1.440				.780
				7:59 a. m.	1		3.600				.840
				8:00 a. m.	1		1.440				.864
				8:01 a. m.	1		1.800				.894
				8:02 a. m.	1		1.080				.912
				8:03 a. m.	1		1.440				.936
				8:04 a. m.	1		1.440				.960
				8:05 a. m.	1		1.800				.990
				8:06 a. m.	1		1.080				1.008
				8:07 a. m.	1		.720				1.020
				8:13 a. m.	6		.060				1.026
				8:16 a. m.	3		.120				1.032
				8:28 a. m.	12		.030				1.038
				12:33 p. m.	245	0	0				1.038
				12:34 p. m.	1		4.320				1.110
				12:35 p. m.	1		2.880				1.158
				12:36 p. m.	1		3.960				1.224
				12:37 p. m.	1		1.800				1.254
				12:40 p. m.	3		.240				1.266
				12:50 p. m.	10	0	0				1.266
				12:52 p. m.	2		2.520				1.350
				12:53 p. m.	1		2.880				1.398
				12:54 p. m.	1		4.320				1.470
				12:57 p. m.	3		1.320				1.536
				12:59 p. m.	2		.540				1.554
				1:00 p. m.	1		.360				1.560
				1:02 p. m.	2		.180				1.566
				1:04 p. m.	2		.720				1.590
				1:07 p. m.	3		.480				1.614
				1:10 p. m.	3		.360				1.632
				1:16 p. m. ⁴	6		.060				1.638
				2:00 p. m. ⁵	44	0	0				1.638
				STORM OF JULY 8, BOX B							
				July 8:							
				5:11 a. m. ¹							

TABLE 96.—Run-off from Lysimeter battery Y-102, for selected storms, 1939—Continued

Date and time	Time interval	Average discharge rate during time interval	Accumulated run-off	Date and time	Time interval	Average discharge rate during time interval	Accumulated run-off	Date and time	Time interval	Average discharge rate during time interval	Accumulated run-off
STORM OF JULY 8, BOX B—Continued				STORM OF JULY 8, BOX C—Continued				STORM OF OCT. 25-27, BOX C			
July 8—Con.	Min.	In. per hr.	In.	July 8—Con.	Min.	In. per hr.	In.	Oct. 25:	Min.	In. per hr.	In.
5:16 a. m.	1	2.880	0.108	12:38 p. m.	1	0.360	1.422	12:21 a. m. ¹			0
5:17 a. m.	1	5.760	.204	12:49 p. m.	9	0	1.422	4:05 p. m. ²	944	0	0
5:18 a. m.	1	2.160	.240	12:50 p. m.	1	1.440	1.446	4:10 p. m.	5	.072	.006
5:20 a. m.	2	1.080	.276	12:51 p. m.	1	4.320	1.518	4:20 p. m.	10	.036	.012
5:21 a. m.	1	2.880	.324	12:52 p. m.	1	4.320	1.590	4:25 p. m.	5	.072	.018
5:22 a. m.	1	.360	.330	12:54 p. m.	2	1.800	1.650	4:30 p. m.	5	.072	.024
5:23 a. m.	1	.360	.336	12:55 p. m.	1	2.220	1.687	4:35 p. m.	5	.216	.042
7:40 a. m.	137	0	.336	12:57 p. m.	2	.690	1.710	4:40 p. m.	5	0	.042
7:41 a. m.	1	2.160	.372	1:00 p. m.	3	.360	1.728	4:48 p. m.	8	.045	.048
7:43 a. m.	2	1.080	.408	1:05 p. m.	5	.720	1.788	4:49 p. m.	1	.360	.054
7:45 a. m.	2	.540	.426	1:08 p. m.	3	.360	1.806	4:50 p. m.	1	.360	.060
7:48 a. m.	3	.120	.432	1:10 p. m.	2	.180	1.812	5:00 p. m.	10	.036	.066
7:50 a. m.	2	1.080	.468	1:15 p. m. ⁴	5	.070	1.818	5:59 p. m.	59	0	.066
7:55 a. m.	5	2.736	.696	2:00 p. m. ⁵	45	0	1.818	6:00 p. m.	1	.360	.072
7:57 a. m.	2	3.240	.804					6:02 p. m.	2	0	.072
7:58 a. m.	1	.360	.810					6:03 p. m.	1	1.080	.090
8:00 a. m.	2	2.700	.900					6:29 p. m.	26	.014	.096
8:02 a. m.	2	2.520	.984					6:30 p. m.	1	.360	.102
8:03 a. m.	1	2.160	1.020					6:33 p. m.	3	.120	.108
8:05 a. m.	2	1.800	1.080					6:34 p. m.	1	.360	.114
8:07 a. m.	2	.360	1.092					10:38 p. m.	244	0	.114
8:13 a. m.	6	.120	1.104	Oct. 25. ⁶			0	10:40 p. m.	2	.900	.144
8:14 a. m.	1	.720	1.116	Oct. 26:			0	10:41 p. m.	1	1.440	.168
12:35 p. m.	261	0	1.116	8:38 a. m. ¹			0	10:43 p. m.	2	1.080	.204
12:38 p. m.	3	3.36	1.284	8:40 a. m. ²	2	0	0	10:45 p. m.	2	.180	.210
12:39 p. m.	1	2.88	1.332	8:41 a. m.	1	2.880	.048	10:46 p. m.	1	.360	.216
12:40 p. m.	1	.36	1.338	8:42 a. m.	1	4.320	.120	10:50 p. m.	4	0	.216
12:52 p. m.	12	.39	1.416	8:43 a. m.	1	1.440	.144	11:00 p. m.	10	.036	.222
12:54 p. m.	2	.72	1.440	8:44 a. m.	1	4.320	.216				
12:56 p. m.	2	2.88	1.536	8:45 a. m.	1	2.880	.264	Oct. 26:			
1:00 p. m.	4	1.44	1.632	8:46 a. m.	1	2.880	.312	8:38 a. m.		0	.222
1:02 p. m.	2	.54	1.650	8:47 a. m.	1	2.880	.360	8:40 a. m.	2	2.880	.318
1:08 p. m.	6	.36	1.686	8:48 a. m.	1	1.440	.384	8:43 a. m.	3	3.360	.486
1:10 p. m.	2	.108	1.722	8:49 a. m.	1	1.800	.414	8:45 a. m.	2	3.780	.612
1:14 p. m.	4	.09	1.728	8:50 a. m.	1	.720	.456	8:46 a. m.	1	5.760	.708
1:22 p. m. ⁴	8	.09	1.740	8:52 a. m.	2	.180	.462	8:48 a. m.	2	3.060	.810
2:00 p. m. ⁵	38	0	1.740	8:55 a. m.	3	.120	.468	8:50 a. m.	2	1.800	.870
				9:18 a. m.	23	0	.468	8:51 a. m.	1	1.800	.900
				9:20 a. m.	2	.360	.480	8:53 a. m.	2	.180	.906
				Oct. 27:				8:54 a. m.	1	.720	.918
				4:46 a. m.	1166	0	.480	8:56 a. m.	2	.180	.924
				4:47 a. m.	1	.360	.486	9:00 a. m.	2	.180	.930
				4:52 a. m.	5	.504	.528	Oct. 27:			
				4:54 a. m.	2	.720	.552	4:09 a. m.	1149	0	.930
				4:55 a. m.	1	1.080	.570	4:10 a. m.	1	.720	.942
				4:56 a. m.	1	.360	.576	4:12 a. m.	2	.360	.954
				4:58 a. m.	2	.720	.600	4:16 a. m.	4	.180	.966
				4:59 a. m.	1	1.440	.624	4:20 a. m.	4	.090	.972
				5:00 a. m.	1	.360	.630	4:21 a. m.	1	.360	.978
				5:04 a. m.	4	.540	.666	4:25 a. m.	4	.090	.984
				5:05 a. m.	1	1.800	.696	4:30 a. m.	5	.072	.990
				5:07 a. m.	2	.720	.720	4:40 a. m.	10	.036	.996
				5:09 a. m.	2	.720	.744	4:43 a. m.	3	.120	1.002
				5:10 a. m.	1	.720	.756	4:45 a. m.	2	.540	1.020
				5:13 a. m.	3	.120	.762	4:50 a. m.	5	.720	1.080
				5:33 a. m.	20	.018	.768	4:52 a. m.	2	.720	1.104
				8:22 a. m.	169	0	.768	4:53 a. m.	1	1.800	1.134
				8:23 a. m.	1	.720	.780	4:59 a. m.	6	.660	1.200
				9:30 a. m.	67	0	.780	5:00 a. m.	1	1.080	1.218
				9:31 a. m.	1	.720	.792	5:02 a. m.	2	.720	1.242
				9:33 a. m.	2	.720	.816	5:03 a. m.	1	1.800	1.272
				9:34 a. m.	1	.720	.828	5:05 a. m.	2	1.080	1.308
				9:36 a. m.	2	.360	.840	5:10 a. m.	5	1.367	1.422
				9:39 a. m.	3	.480	.864	5:13 a. m.	3	.120	1.428
				9:40 a. m.	1	.720	.876	5:16 a. m.	3	.120	1.434
				1:43 p. m.	253	0	.876	5:20 a. m.	4	.090	1.440
				1:44 p. m.	1	.720	.888	5:25 a. m.	5	.072	1.446
				1:45 p. m.	1	1.080	.906	5:30 a. m.	5	0	1.446
				1:47 p. m. ⁴	2	.180	.912	5:37 a. m.	7	.051	1.452
				6:00 p. m. ⁵	253	0	.912	7:45 a. m. ⁷	128	0	1.452
											⁸ 1.790

¹ Rain began. ² Run-off began. ⁴ Run-off ended. ⁵ Rain ended. ⁶ Showers caused no run-off. ⁷ No detailed record after this time. ⁸ Total for storm.

TABLE 97.—Rainfall at station 1¹ for selected storms, 1939

Date and time	Time interval	Accumulated depth	Intensity	Date and time	Time interval	Accumulated depth	Intensity	Date and time	Time interval	Accumulated depth	Intensity
STORM OF FEB. 14-15				STORM OF FEB. 14-15—Continued				STORM OF FEB. 14-15—Continued			
Feb. 14:	Min.	In.	In. per hr.	Feb. 14—Con.	Min.	In.	In. per hr.	Feb. 15—Con.	Min.	In.	In. per hr.
8:30 p. m. ¹		0		10:40 p. m.	20	.14	.09	12:40 a. m.	20	0.37	0.18
8:40 p. m.	10	.01	0.06	11:00 p. m.	20	.18	.12	12:50 a. m.	10	.40	.18
9:00 p. m.	20	.04	.09	11:20 p. m.	20	.21	.09	1:00 a. m.	10	.45	.30
9:14 p. m.	14	.07	.13	11:40 p. m.	20	.23	.06	1:10 a. m.	10	.49	.24
9:44 p. m.	30	.07	.00	12:00 p. m.	20	.27	.12	1:20 a. m.	10	.55	.36
10:00 p. m.	16	.09	.08	Feb. 15:				1:30 a. m.	10	.62	.42
10:20 p. m.	20	.11	.06	12:20 a. m.	20	.31	.12	1:40 a. m.	10	.69	.42

¹ For location of rainfall station see fig. 1.

² Rain began.

TABLE 97.—Rainfall at station 1 for selected storms, 1939—Continued

Date and time	Time interval	Accumulated depth	Intensity	Date and time	Time interval	Accumulated depth	Intensity	Date and time	Time interval	Accumulated depth	Intensity
STORM OF FEB. 14-15—Continued				STORM OF FEB. 14-15—Continued				STORM OF OCT. 25-27—Continued			
Feb. 15—Con.	Min.	In.	In. per hr.	June 18—Con.	Min.	In.	In. per hr.	Oct. 25—Con.	Min.	In.	In. per hr.
1:50 a. m.	10	0.75	0.36	8:20 p. m.	30	1.70	0	8:20 a. m.	20	0.16	0.03
2:00 a. m.	10	.80	.30	8:30 p. m.	10	1.72	.12	9:00 a. m.	40	.16	0
2:10 a. m.	10	.87	.42	9:36 p. m.	66	1.72	0	9:35 a. m.	35	.20	.06
2:20 a. m.	10	.91	.24	9:40 p. m.	4	1.73	.15	9:40 a. m.	5	.23	.36
2:30 a. m.	10	.96	.30	9:50 p. m.	10	1.78	.30	9:45 a. m.	5	.28	.60
2:40 a. m.	10	.99	.18	10:00 p. m.	10	1.81	.18	9:50 a. m.	5	.30	.24
2:50 a. m.	10	1.02	.18	10:10 p. m.	10	1.85	.24	10:00 a. m.	10	.32	.12
3:00 a. m.	10	1.06	.24	10:20 p. m.	10	1.87	.12	10:20 a. m.	20	.35	.09
3:10 a. m.	10	1.11	.30	10:30 p. m.	10	1.88	.06	12:00 m.	100	.35	0
3:20 a. m.	10	1.15	.24	10:48 p. m.	18	1.88	0	1:00 p. m.	60	.36	.01
3:30 a. m.	10	1.17	.12	10:50 p. m.	2	1.90	.60	1:20 p. m.	20	.39	.09
3:40 a. m.	10	1.21	.24	11:00 p. m.	10	1.91	.06	1:49 p. m.	29	.42	.09
3:50 a. m.	10	1.23	.12	11:10 p. m.	10	1.91	T	2:00 p. m.	11	.45	.16
4:00 a. m.	10	1.25	.12	11:20 p. m.	10	1.92	.06	2:16 p. m.	16	.47	.08
4:20 a. m.	20	1.29	.12	11:30 p. m.	10	1.92	T	2:21 p. m.	5	.48	.12
4:40 a. m.	20	1.31	.06	11:40 p. m.	10	1.93	.06	2:36 p. m.	15	.53	.20
5:00 a. m.	20	1.32	.03	11:46 p. m.	6	1.96	.30	2:52 p. m.	16	.63	.37
5:20 a. m. ³	20	1.33	.03	11:50 p. m.	4	1.97	.15	3:00 p. m.	8	.65	.15
7:00 a. m. ⁴	100	1.33	0	12:00 p. m.	10	2.02	.30	3:20 p. m.	20	.69	.12
7:30 a. m.	30	1.34	.02	June 19:				3:30 p. m.	10	.70	.06
8:00 a. m.	30	1.35	.02	12:10 a. m.	10	2.04	.12	3:40 p. m.	10	.70	0
8:30 a. m.	30	1.37	.04	12:12 a. m.	2	2.05	.30	3:48 p. m.	8	.71	.08
9:00 a. m.	30	1.38	.02	12:16 a. m.	4	2.10	.75	4:00 p. m.	2	.73	.60
9:30 a. m.	30	1.39	.02	12:20 a. m.	4	2.11	.15	4:13 p. m.	13	.80	.34
10:00 a. m.	30	1.40	.02	12:30 a. m.	10	2.20	.54	4:17 p. m.	4	.80	0
10:30 a. m. ⁵	30	1.41	.02	12:31 a. m.	1	2.22	1.20	4:20 p. m.	3	.82	.40
June 18:				2:40 a. m.	129	2.22	0	4:30 p. m.	10	.86	.24
7:30 a. m. ¹	0	0	0	2:50 a. m.	10	2.23	.06	4:33 p. m.	3	.91	1.00
7:40 a. m.	10	.01	.06	3:00 a. m.	10	2.28	.30	4:40 p. m.	7	.94	.26
7:50 a. m.	10	.05	.24	3:10 a. m.	10	2.35	.42	5:00 p. m.	20	1.02	.24
8:00 a. m.	10	.06	.06	3:20 a. m.	10	2.43	.48	5:20 p. m.	20	1.10	.24
8:10 a. m.	10	.08	.12	3:30 a. m.	10	2.51	.48	5:32 p. m.	12	1.15	.25
8:20 a. m.	10	.10	.12	3:40 a. m.	10	2.57	.36	5:40 p. m.	8	1.17	.15
8:30 a. m.	10	.11	.06	3:50 a. m.	10	2.62	.30	5:59 p. m.	19	1.20	.09
8:40 a. m.	10	.13	.12	4:00 a. m.	10	2.64	.12	6:00 p. m.	11	1.22	.11
8:50 a. m.	10	.14	.20	4:10 a. m.	10	2.65	.60	6:11 p. m.	11	1.24	.11
8:53 a. m.	3	.20	1.80	4:20 a. m.	10	2.67	.12	6:20 p. m.	9	1.28	.27
8:55 a. m.	2	.27	.84	4:30 a. m.	10	2.70	.18	6:28 p. m.	8	1.30	.15
9:00 a. m.	5	.33	.90	4:40 a. m.	10	2.72	.12	6:40 p. m.	12	1.30	0
9:04 a. m.	4	.34	.10	7:56 a. m.	196	2.72	0	7:00 p. m.	20	1.31	.03
9:10 a. m.	6	.36	.40	8:00 a. m.	4	2.72	T	7:20 p. m.	20	1.32	.03
9:13 a. m.	3	.39	.90	8:10 a. m.	10	2.76	.24	7:40 p. m.	20	1.34	.06
9:15 a. m.	2	.40	.12	8:20 a. m.	10	2.82	.36	10:22 p. m.	162	1.34	0
9:20 a. m.	5	.42	.12	8:30 a. m. ³	10	2.86	.24	10:26 p. m.	4	1.43	1.35
9:30 a. m.	10	.44	.12	STORM OF JULY 8				10:30 p. m.	1	1.46	.45
9:40 a. m.	10	.47	.18	July 8:				10:31 p. m.	4	1.47	.60
9:50 a. m.	10	.50	.18	5:08 a. m. ²	0	.01	0	10:35 p. m.	4	1.62	2.25
10:00 a. m.	10	.53	.18	5:10 a. m.	2	.03	.12	10:38 p. m.	3	1.67	1.00
10:10 a. m.	10	.55	.12	5:20 a. m.	10	.07	.40	10:40 p. m.	2	1.68	.30
10:30 a. m.	10	.61	.18	12:14 p. m.	414	.03	0	10:41 p. m.	1	1.77	5.40
10:40 a. m.	10	.63	.12	12:20 p. m.	6	.13	1.80	10:45 p. m.	4	1.81	.60
10:50 a. m.	10	.64	.06	12:22 p. m.	2	.21	2.40	11:00 p. m.	15	1.84	.12
11:00 a. m.	4	.65	.15	12:24 p. m.	2	.23	.20	Oct. 26:			
11:04 a. m.	10	.69	.54	12:44 p. m.	14	.23	0	12:20 a. m.	80	1.84	0
11:10 a. m.	6	.70	.50	12:46 p. m.	2	.27	1.20	1:00 a. m.	40	1.85	.02
11:20 a. m.	10	.79	.69	12:48 p. m.	2	.33	1.80	2:00 a. m.	60	1.86	.01
11:23 a. m.	3	.86	1.40	12:50 p. m.	2	.39	1.80	2:26 a. m.	26	1.86	0
11:30 a. m.	7	.94	.69	12:52 p. m.	2	.46	2.10	2:40 a. m.	14	1.91	.20
11:36 a. m.	6	1.02	.80	12:54 p. m.	2	.47	.30	3:00 a. m.	20	1.95	.12
11:40 a. m.	4	1.05	.45	12:56 p. m.	2	.51	1.20	3:10 a. m.	10	1.96	.06
11:50 a. m.	10	1.10	.30	1:00 p. m.	4	.54	.45	6:00 a. m.	170	1.96	0
12:00 m.	10	1.16	.36	1:10 p. m.	10	.56	.12	7:00 a. m.	60	1.97	.01
12:04 p. m.	4	1.18	.30	1:20 p. m.	10	.57	.06	8:32 a. m.	92	1.97	0
12:06 p. m.	2	1.18	T	1:46 p. m.	26	.57	0	8:40 a. m.	8	1.98	.08
12:10 p. m.	4	1.22	.60	1:50 p. m.	4	.59	.30	8:50 a. m.	10	2.01	0
12:20 p. m.	10	1.25	.18	2:00 p. m.	10	.62	.18	8:54 a. m.	4	2.02	.15
12:24 p. m.	4	1.30	.75	2:10 p. m. ³	10	.64	.12	11:00 a. m.	126	2.02	0
12:30 p. m.	6	1.34	.40	STORM OF OCT. 25-27				11:05 a. m.	5	2.03	.12
12:40 p. m.	10	1.39	.30	Oct. 25:				12:00 m.	55	2.04	.01
12:50 p. m.	10	1.40	.06	12:20 a. m. ²	0	.01	0	1:00 p. m.	60	2.05	.01
1:00 p. m.	10	1.41	.06	12:34 a. m.	14	.01	.04	1:40 p. m. ³	40	2.06	.02
1:10 p. m.	10	1.42	.06	4:20 a. m.	236	.01	0	t. 27:			
4:03 p. m.	173	1.42	0	5:00 a. m.	40	.02	.02	3:57 a. m. ²	3	.01	0
4:05 p. m.	2	1.45	.90	5:29 a. m.	29	.02	0	4:00 a. m.	7	.02	.08
4:50 p. m.	45	1.45	0	5:32 a. m.	3	.03	.20	4:07 a. m.	13	.06	.18
5:00 p. m.	10	1.46	.06	6:00 a. m.	18	.03	0	4:20 a. m.	13	.09	.14
5:20 p. m.	20	1.46	0	6:34 a. m.	34	.04	.02	4:33 a. m.	7	.12	.26
5:40 p. m.	20	1.48	.06	7:00 a. m.	16	.04	0	4:40 a. m.	2	.13	.30
6:00 p. m.	20	1.49	.03	7:10 a. m.	6	.06	0	4:42 a. m.	2	.16	.90
6:20 p. m.	20	1.49	T	7:20 a. m.	10	.11	.30	4:46 a. m.	2	.18	.60
6:40 p. m.	20	1.50	T	7:36 a. m.	16	.13	.06	4:51 a. m.	5	.25	.84
6:42 p. m.	2	1.50	T	8:00 a. m.	14	.15	.08	4:53 a. m.	2	.30	1.50
6:50 p. m.	8	1.52	.15					4:57 a. m.	4	.34	.60
6:56 p. m.	6	1.54	.20					4:58 a. m.	1	.40	3.63
7:00 p. m.	4	1.57	.45					5:00 a. m.	2	.41	.30
7:10 p. m.	10	1.61	.24					5:09 a. m.	9	.46	.30
7:16 p. m.	6	1.65	.40					5:20 a. m.	11	.48	.11
7:20 p. m.	4	1.65	T					5:34 a. m.	14	.50	.09
7:30 p. m.	10	1.66	.06					5:40 a. m.	6	.51	.10
7:40 p. m.	10	1.68	.12					6:00 a. m.	20	.52	.03
7:50 p. m.	10	1.70	.12					7:00 a. m.	60	.53	.01

¹ Rain began.² Rain ended.³ Rain changed to snow.⁴ Snow ended.

TABLE 97.—Rainfall at station 1 for selected storms, 1939—Continued

Date and time	Time interval	Accumulated depth	Intensity	Date and time	Time interval	Accumulated depth	Intensity	Date and time	Time interval	Accumulated depth	Intensity
STORM OF OCT. 25-27—Continued				STORM OF OCT. 25-27—Continued				STORM OF OCT. 25-27—Continued			
Oct. 27—Con.	Min.	In.	In. per hr.	Oct. 27—Con.	Min.	In.	In. per hr.	Oct. 27—Con.	Min.	In.	In. per hr.
7:38 a. m.	38	0.53	0	9:22 a. m.	22	0.70	0	1:30 p. m.	30	0.89	0
7:44 a. m.	6	.55	.20	9:26 a. m.	4	.73	.45	1:32 p. m.	2	.96	2.10
8:00 a. m.	16	.55	0	9:29 a. m.	3	.74	.20	1:35 p. m.	3	1.02	1.20
8:13 a. m.	13	.57	.09	9:30 a. m.	1	.76	1.20	1:40 p. m.	5	1.02	0
8:16 a. m.	3	.63	1.20	9:31 a. m.	1	.76	0	2:00 p. m.	20	1.03	.03
8:20 a. m.	4	.64	.15	9:35 a. m.	4	.84	1.20	3:15 p. m.	75	1.03	0
8:35 a. m.	15	.65	.12	9:40 a. m.	5	.84	0	3:20 p. m.	5	1.04	.12
8:40 a. m.	5	.66	.12	10:00 a. m.	20	.85	.03	4:00 p. m.	40	1.05	.02
8:46 a. m.	6	.67	.10	10:20 a. m.	20	.87	.06	5:00 p. m.	60	1.05	0
8:53 a. m.	7	.69	.17	12:20 p. m.	120	.87	0	6:00 p. m.	60	1.06	.01
9:00 a. m.	7	.70	.08	1:00 p. m.	40	.89	.03	7:00 p. m. ³	60	1.07	.01

³ Rain ended.TABLE 98.—Rainfall at station 7¹ for selected storms, 1939

Date and time	Time interval	Accumulated depth	Intensity	Date and time	Time interval	Accumulated depth	Intensity	Date and time	Time interval	Accumulated depth	Intensity
STORM OF FEB. 14-15				STORM OF JUNE 18-19—Continued				STORM OF JUNE 18-19—Continued			
Feb. 14:	Min.	In.	In. per hr.	June 18—Con.	Min.	In.	In. per hr.	June 19—Con.	Min.	In.	In. per hr.
8:30 p. m. ²	10	0	0.06	8:45 a. m.	5	0.14	0	12:40 a. m.	5	2.63	0.84
8:40 p. m.	10	.01	.06	8:50 a. m.	5	.15	.12	12:45 a. m.	5	2.66	.39
8:50 p. m.	10	.02	.06	8:52 a. m.	2	.16	.30	1:00 a. m.	15	2.72	.24
9:00 p. m.	10	.04	.12	8:55 a. m.	3	.22	1.20	1:15 a. m.	15	2.73	.04
9:20 p. m.	20	.06	.06	9:00 a. m.	5	.30	.96	1:30 a. m.	15	2.74	.04
9:40 p. m.	20	.07	.03	9:05 a. m.	5	.37	.84	2:00 a. m.	30	2.75	.02
10:00 p. m.	20	.08	.03	9:10 a. m.	5	.38	.12	2:30 a. m.	30	2.76	.02
10:20 p. m.	20	.10	.06	9:13 a. m.	3	.44	1.20	2:45 a. m.	15	2.77	.04
10:40 p. m.	20	.13	.09	9:15 a. m.	2	.45	.30	3:00 a. m.	15	2.80	.12
11:00 p. m.	20	.16	.09	9:30 a. m.	15	.47	.08	3:15 a. m.	15	2.88	.32
11:20 p. m.	20	.19	.09	9:45 a. m.	15	.52	.20	3:30 a. m.	15	2.96	.32
11:40 p. m.	20	.21	.06	10:00 a. m.	15	.57	.20	3:45 a. m.	15	3.00	.16
12:00 m.	20	.25	.12	10:15 a. m.	15	.61	.16	4:00 a. m.	15	3.02	.08
Feb. 15:				10:30 a. m.	15	.67	.24	4:15 a. m.	15	3.04	.08
12:10 a. m.	10	.26	.06	10:45 a. m.	15	.72	.20	4:30 a. m.	15	3.09	.20
12:20 a. m.	10	.29	.18	11:00 a. m.	15	.73	.04	4:45 a. m.	15	3.10	.04
12:30 a. m.	10	.31	.12	11:10 a. m.	10	.78	.30	5:00 a. m.	15	3.10	0
12:40 a. m.	10	.33	.12	11:20 a. m.	10	.87	.54	5:30 a. m.	30	3.11	.02
12:50 a. m.	10	.35	.12	11:30 a. m.	10	1.05	1.08	6:00 a. m.	30	3.11	0
1:00 a. m.	10	.40	.30	11:40 a. m.	10	1.18	.78	8:00 a. m.	120	3.11	0
1:10 a. m.	10	.43	.18	11:50 a. m.	10	1.26	.48	8:30 a. m.	30	3.13	.04
1:20 a. m.	10	.48	.30	12:00 m.	10	1.31	.30	9:00 a. m.	30	3.14	.02
1:30 a. m.	10	.54	.36	12:10 p. m.	10	1.40	.54	9:40 a. m.	40	3.15	.02
1:40 a. m.	10	.60	.36	12:20 p. m.	10	1.44	.24	10:20 a. m. ³	40	3.16	.02
1:50 a. m.	10	.65	.30	12:30 p. m.	10	1.54	.60				
2:00 a. m.	10	.71	.36	12:40 p. m.	10	1.60	.36	STORM OF JULY 8			
2:10 a. m.	10	.75	.24	12:50 p. m.	10	1.61	.06	July 8:			
2:20 a. m.	10	.81	.36	1:00 p. m.	10	1.62	.06	5:12 a. m. ²	6	0	0
2:30 a. m.	10	.87	.36	1:10 p. m.	10	1.64	.12	5:18 a. m.	132	.04	.40
2:40 a. m.	10	.94	.42	1:40 p. m.	90	1.64	0	7:30 a. m.	9	.05	0
2:45 a. m.	5	.98	.48	2:45 p. m.	5	1.66	.24	7:39 a. m.	1	.07	.07
2:50 a. m.	5	1.01	.36	4:45 p. m.	120	1.66	0	7:40 a. m.	2	.18	1.20
3:00 a. m.	10	1.04	.18	4:50 p. m.	5	1.67	.12	7:42 a. m.	2	.22	.30
3:10 a. m.	10	1.06	.12	4:55 p. m.	5	1.68	.12	7:44 a. m.	2	.23	.30
3:20 a. m.	10	1.08	.12	5:30 p. m.	35	1.68	0	7:50 a. m.	4	.24	.15
3:30 a. m.	10	1.12	.24	6:00 p. m.	30	1.69	.02	7:59 a. m.	9	.26	.13
3:40 a. m.	10	1.13	.06	6:30 p. m.	30	1.70	.02	8:00 a. m.	1	.28	1.20
3:50 a. m.	10	1.15	.12	6:45 p. m.	15	1.70	0	8:06 a. m.	6	.29	.10
4:00 a. m.	10	1.16	.06	7:00 p. m.	15	1.77	.28	8:10 a. m.	4	.30	.15
4:20 a. m.	20	1.17	.03	7:15 p. m.	15	1.86	.36	10:45 a. m.	158	.30	0
4:40 a. m.	20	1.18	.03	7:30 p. m.	15	1.89	.12	10:50 a. m.	2	.32	.60
5:00 a. m.	20	1.19	.03	7:45 p. m.	15	1.91	.08	12:20 p. m.	90	.32	0
5:20 a. m.	20	1.20	.03	8:00 p. m.	15	1.95	.16	12:24 p. m.	3	.35	.45
8:06 a. m. ⁴	166	1.20	0	8:30 p. m.	30	1.95	0	12:27 p. m.	3	.40	1.00
8:20 a. m.	14	1.21	.04	8:45 p. m.	15	1.96	.04	12:30 p. m.	3	.41	.20
8:40 a. m.	20	1.23	.06	9:00 p. m.	15	1.97	.04	12:47 p. m.	17	.41	0
9:00 a. m.	20	1.25	.06	9:36 p. m.	36	1.97	0	12:50 p. m.	3	.56	3.00
9:20 a. m.	20	1.27	.06	9:40 p. m.	4	1.98	.15	12:52 p. m.	2	.69	3.90
9:40 a. m.	20	1.29	.06	9:50 p. m.	10	2.02	.24	12:55 p. m.	3	.83	2.80
10:00 a. m.	20	1.30	.03	10:00 p. m.	10	2.06	.24	12:56 p. m.	1	.84	.60
10:20 a. m.	20	1.31	.03	10:10 p. m.	10	2.12	.36	1:00 p. m.	4	.91	1.05
10:40 a. m.	20	1.33	.06	10:20 p. m.	10	2.14	.12	1:04 p. m.	4	.94	.45
11:00 a. m. ⁵	20	1.34	.03	10:30 p. m.	10	2.15	.06	1:07 p. m.	3	.95	.20
STORM OF JUNE 18-19				10:45 p. m.	15	2.15	0	1:08 p. m.	1	.96	.60
June 18:				10:50 p. m.	5	2.16	.12	1:10 p. m.	2	.96	0
7:40 a. m. ¹	5	0	0	10:55 p. m.	5	2.17	.12	1:20 p. m.	10	.98	.13
7:45 a. m.	15	.01	.12	11:30 p. m.	35	2.17	0	1:50 p. m.	30	.98	0
8:00 a. m.	15	.04	.12	11:35 p. m.	5	2.18	.12	2:00 p. m.	10	1.00	.12
8:15 a. m.	15	.08	.16	11:40 p. m.	5	2.18	0	2:10 p. m.	10	1.01	.06
8:30 a. m.	15	.12	.16	11:44 p. m.	4	2.19	.15	2:20 p. m. ³	10	1.02	.06
8:35 a. m.	5	.13	.12	11:45 p. m.	1	2.21	1.20				
8:40 a. m.	5	.14	.12	12:00 p. m.	15	2.28	.28				
				June 19:							
				12:15 a. m.	15	2.34	.24				
				12:30 a. m.	15	2.46	.48				
				12:35 a. m.	5	2.56	1.20				

¹ For location of rainfall station see fig. 1.² Rain began.³ Rain ended.⁴ Rain changed to snow.⁵ Snow ended.

TABLE 98.—Rainfall at station 7 for selected storms, 1939—Continued

Date and time	Time interval	Accumulated depth	Intensity	Date and time	Time interval	Accumulated depth	Intensity	Date and time	Time interval	Accumulated depth	Intensity
STORM OF OCT. 25-27				STORM OF OCT. 25-27—Continued				STORM OF OCT. 25-27—Continued			
Oct. 25:	Min.	In.	In. per hr.	Oct. 25—Con.	Min.	In.	In. per hr.	Oct. 27—Con.	Min.	In.	In. per hr.
12:23 a. m. ²		0	0	6:00 p. m.	15	1.33	0.12	4:40 a. m.	5	0.14	0.36
12:24 a. m.	1	.02	1.20	6:02 p. m.	2	1.35	.60	4:43 a. m.	3	.15	.20
12:25 a. m.	1	.05	1.80	6:05 p. m.	3	1.36	.20	4:44 a. m.	1	.17	1.20
12:27 a. m.	2	.09	1.20	6:10 p. m.	5	1.37	.12	4:45 a. m.	1	.20	1.80
12:30 a. m.	3	.10	.20	6:20 p. m.	10	1.39	.12	4:50 a. m.	5	.27	.84
12:40 a. m.	10	.12	.12	6:30 p. m.	10	1.42	.18	4:55 a. m.	5	.35	.96
4:30 a. m.	230	.12	0	6:45 p. m.	15	1.42	0	4:56 a. m.	1	.37	1.20
5:00 a. m.	30	.14	.04	7:00 p. m.	15	1.44	.08	4:59 a. m.	3	.41	.80
5:28 a. m.	28	.14	0	7:15 p. m.	15	1.45	.04	5:00 a. m.	1	.45	2.40
5:30 a. m.	2	.15	.30	7:30 p. m.	15	1.46	.04	5:01 a. m.	1	.46	.60
6:33 a. m.	63	.15	0	7:45 p. m.	15	1.47	.04	5:05 a. m.	4	.48	.30
6:35 a. m.	2	.17	.60	9:45 p. m.	120	1.47	0	5:06 a. m.	1	.49	.60
6:40 a. m.	5	.18	.12	10:00 p. m.	15	1.48	.04	5:10 a. m.	4	.54	.75
7:00 a. m.	20	.18	0	10:23 p. m.	23	1.48	0	5:13 a. m.	3	.56	.40
7:05 a. m.	5	.20	.24	10:25 p. m.	2	1.49	.30	5:15 a. m.	2	.56	0
7:10 a. m.	5	.21	.12	10:30 p. m.	5	1.51	.24	5:20 a. m.	5	.57	.12
7:15 a. m.	5	.22	.12	10:32 p. m.	2	1.51	0	5:25 a. m.	5	.58	.12
7:20 a. m.	5	.24	.24	10:34 p. m.	2	1.57	1.80	5:30 a. m.	5	.59	.12
7:30 a. m.	10	.25	.06	10:35 p. m.	1	1.62	3.00	6:00 a. m.	30	.60	.02
7:40 a. m.	10	.26	.06	10:36 p. m.	1	1.68	3.60	6:30 a. m.	30	.60	0
7:50 a. m.	10	.27	.06	10:38 p. m.	2	1.74	1.80	7:00 a. m.	30	.61	.02
8:00 a. m.	10	.27	0	10:40 p. m.	2	1.84	3.00	7:30 a. m.	30	.62	.02
8:30 a. m.	30	.29	.04	10:42 p. m.	2	1.93	2.70	7:45 a. m.	15	.63	.04
9:00 a. m.	30	.30	.02	10:45 p. m.	3	1.96	.60	8:00 a. m.	15	.66	.12
9:30 a. m.	30	.32	.04	10:50 p. m.	5	1.98	.24	8:10 a. m.	10	.66	0
9:35 a. m.	5	.35	.36	11:00 p. m.	10	2.00	.12	8:15 a. m.	5	.69	.36
9:40 a. m.	5	.37	.24	Oct. 26:				8:16 a. m.	1	.70	.60
9:45 a. m.	5	.40	.36	12:30 a. m.	90	2.00	0	8:18 a. m.	2	.76	1.80
10:00 a. m.	15	.44	.16	12:45 a. m.	15	2.01	.04	8:20 a. m.	2	.77	.30
10:15 a. m.	15	.46	.08	1:25 a. m.	40	2.01	0	8:30 a. m.	10	.79	.12
10:30 a. m.	15	.47	.04	1:28 a. m.	3	2.07	1.20	8:40 a. m.	10	.80	.06
12:30 p. m.	120	.47	0	1:30 a. m.	2	2.09	.60	8:50 a. m.	10	.82	.12
12:45 p. m.	15	.48	.04	1:35 a. m.	5	2.11	.24	9:00 a. m.	10	.84	.12
1:00 p. m.	15	.48	0	8:32 a. m.	417	2.11	0	9:25 a. m.	25	.84	0
1:15 p. m.	15	.50	.08	8:33 a. m.	1	2.13	1.20	9:30 a. m.	5	.89	.60
1:30 p. m.	15	.52	.08	8:34 a. m.	1	2.19	3.60	9:33 a. m.	3	.96	1.40
1:45 p. m.	15	.53	.04	8:35 a. m.	1	2.23	2.40	9:35 a. m.	2	.98	.60
2:00 p. m.	15	.56	.12	8:36 a. m.	1	2.27	2.40	9:40 a. m.	5	.99	.12
2:15 p. m.	15	.59	.12	8:37 a. m.	1	2.32	3.00	9:50 a. m.	10	.99	0
2:30 p. m.	15	.62	.12	8:38 a. m.	1	2.39	4.20	10:00 a. m.	10	1.00	.06
2:45 p. m.	15	.70	.32	8:39 a. m.	1	2.45	3.60	12:30 p. m.	150	1.00	0
3:00 p. m.	15	.75	.20	8:40 a. m.	1	2.53	4.80	1:00 p. m.	30	1.01	.02
3:15 p. m.	15	.78	.12	8:42 a. m.	2	2.59	1.80	1:34 p. m.	34	1.01	0
3:30 p. m.	15	.79	.04	8:45 a. m.	3	2.61	.40	1:35 p. m.	1	1.02	.60
3:45 p. m.	15	.80	.04	8:50 a. m.	5	2.62	.12	1:36 p. m.	1	1.07	3.00
4:00 p. m.	15	.82	.08	9:00 a. m.	10	2.63	.06	1:38 p. m.	2	1.14	2.10
4:15 p. m.	15	.89	.28	9:10 a. m. ³	10	2.64	.06	1:40 p. m.	2	1.15	.30
4:30 p. m.	15	.97	.32	Oct. 27:				2:45 p. m.	65	1.15	0
4:35 p. m.	5	1.03	.72	3:55 a. m. ²		0	0	3:00 p. m.	15	1.16	.04
4:39 p. m.	4	1.04	.15	4:00 a. m.	5	.01	.12	3:16 p. m.	16	1.16	0
4:40 p. m.	1	1.06	1.20	4:05 a. m.	5	.01	0	3:20 p. m.	4	1.18	.30
4:45 p. m.	5	1.08	.24	4:08 a. m.	3	.02	.20	3:25 p. m.	5	1.19	.12
5:00 p. m.	15	1.14	.24	4:10 a. m.	2	.03	.30	3:30 p. m.	5	1.20	.12
5:15 p. m.	15	1.20	.24	4:20 a. m.	10	.07	.24	5:00 p. m.	90	1.20	0
5:30 p. m.	15	1.27	.28	4:30 a. m.	10	.09	.12	5:30 p. m.	30	1.21	.02
5:45 p. m.	15	1.30	.12	4:35 a. m.	5	.11	.24	6:00 p. m. ³	30	1.22	.02

² Rain began.³ Rain ended.TABLE 99.—Rainfall at station 8¹ for selected storms, 1939

Date and time	Time interval	Accumulated depth	Intensity	Date and time	Time interval	Accumulated depth	Intensity	Date and time	Time interval	Accumulated depth	Intensity
STORM OF FEB. 14-15				STORM OF FEB. 14-15—Continued				STORM OF FEB. 14-15—Continued			
Feb. 14:	Min.	In.	In. per hr.	Feb. 15—Con.	Min.	In.	In. per hr.	Feb. 15—Con.	Min.	In.	In. per hr.
8:30 p. m.		0		12:50 a. m.	10	0.39	0.18	3:20 a. m.	10	1.15	0.18
8:40 p. m.	10	.01	0.06	1:00 a. m.	10	.44	.30	3:30 a. m.	10	1.17	.12
9:00 p. m.	20	.04	.09	1:10 a. m.	10	.48	.24	3:40 a. m.	10	1.19	.12
9:20 p. m.	20	.07	.09	1:20 a. m.	10	.53	.30	3:50 a. m.	10	1.20	.06
9:40 p. m.	20	.08	.03	1:30 a. m.	10	.59	.36	4:00 a. m.	10	1.21	.06
10:00 p. m.	20	.10	.06	1:40 a. m.	10	.65	.36	4:15 a. m.	15	1.24	.12
10:20 p. m.	20	.12	.06	1:50 a. m.	10	.72	.42	4:30 a. m.	15	1.25	.04
10:40 p. m.	20	.14	.06	2:00 a. m.	10	.79	.42	5:00 a. m.	30	1.26	.02
11:00 p. m.	20	.17	.09	2:10 a. m.	10	.83	.24	5:20 a. m.	20	1.27	.03
11:20 p. m.	20	.21	.12	2:20 a. m.	10	.89	.36	8:30 a. m.	190	1.27	0
11:40 p. m.	20	.24	.09	2:50 a. m.	10	.94	.30	9:00 a. m.	30	1.28	.02
12:00 p. m.	20	.27	.09	2:40 a. m.	10	1.00	.36	9:30 a. m.	30	1.29	.02
Feb. 15:				2:46 a. m.	6	1.04	.40	10:00 a. m.	30	1.30	.02
12:10 a. m.	10	.29	.12	2:50 a. m.	4	1.06	.36	12:40 p. m.	160	1.30	0
12:20 a. m.	10	.32	.18	3:00 a. m.	10	1.08	.12	1:00 p. m.	20	1.32	.06
12:30 a. m.	10	.34	.12	3:10 a. m.	10	1.12	.24	1:30 p. m.	30	1.33	.02
12:40 a. m.	10	.36	.12								

¹ For location of rainfall station, see fig. 1.

TABLE 99.—Rainfall at station 8 for selected storms, 1939—Continued

Date and time	Time interval	Accumulated depth	Intensity	Date and time	Time interval	Accumulated depth	Intensity	Date and time	Time interval	Accumulated depth	Intensity
STORM OF JUNE 18-19				STORM OF JUNE 18-19—Continued				STORM OF OCT. 25-27—Continued			
June 18:	Min.	In.	In. per hr.	June 19—Con.	Min.	In.	In. per hr.	Oct. 25—Con.	Min.	In.	In. per hr.
7:40 a. m. ¹	10	0	0	3:50 a. m.	10	2.91	0.12	4:00 p. m.	20	0.82	0.12
7:50 a. m.	10	.01	.06	4:00 a. m.	10	2.99	.48	4:14 p. m.	14	.88	.26
8:00 a. m.	10	.02	.06	4:10 a. m.	10	3.02	.18	4:20 p. m.	6	.90	.20
8:10 a. m.	10	.04	.12	4:20 a. m.	10	3.05	.18	4:40 p. m.	20	1.01	.33
8:20 a. m.	10	.05	.06	4:30 a. m.	10	3.07	.12	5:00 p. m.	20	1.08	.21
8:30 a. m.	10	.07	.12	4:40 a. m.	10	3.09	.12	5:20 p. m.	20	1.15	.21
8:40 a. m.	10	.09	.12	7:30 a. m.	170	3.09	0	5:40 p. m.	20	1.24	.27
8:50 a. m.	10	.10	.06	7:40 a. m.	10	3.11	.12	6:00 p. m.	20	1.26	.06
8:53 a. m.	3	.12	.40	7:50 a. m.	10	3.12	.06	6:05 p. m.	5	1.29	.36
9:00 a. m.	5	.25	1.32	8:00 a. m.	10	3.13	.06	6:20 p. m.	15	1.30	.04
9:05 a. m.	5	.34	1.08	8:10 a. m.	10	3.14	.06	6:40 p. m.	20	1.34	.12
9:10 a. m.	5	.38	.48	8:20 a. m. ³	10	3.15	.06	7:00 p. m.	20	1.37	.09
9:15 a. m.	5	.40	.24	STORM OF JULY 8				7:20 p. m.	20	1.38	.03
9:20 a. m.	5	.42	.24	July 8:				7:40 p. m.	20	1.39	.03
9:30 a. m.	10	.44	.12	5:08 a. m. ²		0	0	8:00 p. m.	20	1.40	.03
9:40 a. m.	10	.46	.12	5:10 a. m.	2	.01	.30	9:30 p. m.	90	1.40	0
9:50 a. m.	10	.50	.24	5:20 a. m.	10	.04	.18	10:00 p. m.	30	1.42	.04
10:00 a. m.	10	.53	.18	7:59 a. m.	159	.04	0	10:30 p. m.	30	1.43	.02
10:10 a. m.	10	.55	.12	8:00 a. m.	1	.07	1.80	10:32 p. m.	2	1.47	1.20
10:20 a. m.	10	.58	.18	8:02 a. m.	2	.08	.30	10:40 p. m.	8	1.72	1.88
10:30 a. m.	10	.60	.12	8:06 a. m.	4	.08	0	10:42 p. m.	2	1.77	1.50
10:40 a. m.	10	.66	.36	8:10 a. m.	4	.10	.30	10:50 p. m.	8	1.80	.25
10:50 a. m.	10	.68	.12	12:20 p. m.	250	.10	0	11:00 p. m.	10	1.82	.12
11:10 a. m.	10	.74	.24	12:23 p. m.	3	.16	1.20	11:10 p. m.	10	1.83	.06
11:20 a. m.	10	.86	.72	12:44 p. m.	21	.16	0	Oct. 26:			
11:30 a. m.	10	1.00	.84	12:47 p. m.	3	.35	3.80	1:25 a. m.	135	1.83	0
11:40 a. m.	10	1.15	.90	12:48 p. m.	1	.39	2.40	1:30 a. m.	5	1.90	.84
11:50 a. m.	10	1.19	.24	12:50 p. m.	2	.51	3.60	1:40 a. m.	10	1.91	.06
12:00 p. m.	10	1.24	.30	12:56 p. m.	6	.69	1.80	2:40 a. m.	60	1.91	0
12:10 p. m.	10	1.29	.30	1:00 p. m.	4	.72	.45	3:00 a. m.	20	1.92	.03
12:20 p. m.	10	1.34	.30	1:10 p. m.	10	.74	.12	3:20 a. m.	20	1.93	.03
12:30 p. m.	10	1.45	.66	1:20 p. m.	10	.75	.06	8:30 a. m.	310	1.93	0
12:40 p. m.	10	1.54	.54	1:50 p. m.	10	.76	.06	8:31 a. m.	1	1.98	3.00
12:50 p. m.	10	1.55	.06	2:00 p. m.	10	.77	.06	8:35 a. m.	4	2.18	3.00
1:00 p. m.	10	1.56	.06	2:10 p. m. ³	10	.78	.06	8:40 a. m.	5	2.31	.36
1:10 p. m.	10	1.57	.06	STORM OF OCT. 25-27				8:45 a. m.	5	2.33	.24
2:00 p. m.	50	1.57	0	Oct. 25:				9:00 a. m.	15	2.34	.04
2:30 p. m.	30	1.58	.02	12:20 a. m. ²		0	0	9:20 a. m.	20	2.34	0
3:00 p. m.	30	1.59	.02	12:40 a. m.	20	.01	.03	9:40 a. m. ³	20	2.35	.03
3:30 p. m.	30	1.60	.02	1:00 a. m.	20	.02	.03	Oct. 27:			
5:00 p. m.	90	1.60	0	2:00 a. m.	60	.03	.01	4:00 a. m. ²		0	0
5:30 p. m.	30	1.61	.02	3:00 a. m.	60	.04	.01	4:10 a. m.	10	.03	.18
6:00 p. m.	30	1.62	.02	4:00 a. m.	60	.05	.01	4:20 a. m.	10	.07	.24
6:30 p. m.	30	1.63	.02	5:00 a. m.	60	.06	.01	4:35 a. m.	15	.10	.12
6:50 p. m.	20	1.64	.03	6:00 a. m.	60	.07	.01	4:40 a. m.	5	.12	.24
7:00 p. m.	10	1.68	.24	6:33 a. m.	33	.08	.02	4:45 a. m.	5	.14	.24
7:10 p. m.	10	1.74	.36	6:40 a. m.	7	.10	.17	4:50 a. m.	5	.27	1.56
7:20 p. m.	10	1.80	.36	7:00 a. m.	20	.11	.03	4:55 a. m.	5	.32	.60
7:30 p. m.	10	1.84	.24	7:14 a. m.	14	.14	.13	5:00 a. m.	5	.42	1.20
7:40 p. m.	10	1.86	.12	7:20 a. m.	6	.17	.30	5:10 a. m.	10	.52	.60
7:50 p. m.	10	1.87	.06	7:40 a. m.	20	.20	.09	5:20 a. m.	10	.53	.06
8:00 p. m.	10	1.88	.06	8:00 a. m.	20	.20	0	5:40 a. m.	20	.56	.09
9:40 p. m.	100	1.88	0	8:20 a. m.	20	.23	.09	6:00 a. m.	20	.57	.03
9:50 p. m.	10	1.93	.30	8:40 a. m.	20	.24	.03	7:20 a. m.	80	.57	0
10:00 p. m.	10	1.96	.18	9:00 a. m.	20	.25	.03	7:40 a. m.	20	.60	.09
10:10 p. m.	10	1.99	.18	9:20 a. m.	20	.26	.03	8:00 a. m.	20	.62	.06
10:20 p. m.	10	2.04	.30	9:36 a. m.	16	.27	.04	8:15 a. m.	15	.63	.04
10:30 p. m.	10	2.05	.06	9:40 a. m.	4	.30	.45	8:20 a. m.	5	.72	1.08
10:50 p. m.	20	2.05	0	9:50 a. m.	10	.38	.48	8:40 a. m.	20	.75	.09
11:00 p. m.	10	2.06	.06	10:00 a. m.	10	.40	.12	8:50 a. m.	10	.77	.12
11:15 p. m.	15	2.07	.04	10:20 a. m.	20	.43	.09	9:00 a. m.	10	.78	.06
11:30 p. m.	15	2.08	.04	10:40 a. m.	20	.44	.03	9:20 a. m.	20	.78	0
12:00 p. m.	30	2.14	.12	11:00 a. m.	20	.45	.03	9:30 a. m.	10	.84	.36
June 19:				1:00 p. m.	120	.45	0	9:35 a. m.	5	.93	1.08
12:10 a. m.	10	2.18	.24	1:20 p. m.	10	.47	.12	9:40 a. m.	5	.93	0
12:20 a. m.	10	2.21	.18	1:40 p. m.	20	.50	.06	10:00 a. m.	20	.94	.03
12:30 a. m.	10	2.39	1.08	2:00 p. m.	20	.52	.06	10:20 a. m.	20	.96	.06
12:40 a. m.	10	2.53	.84	2:20 p. m.	20	.56	.12	10:40 a. m.	20	.97	.03
12:50 a. m.	10	2.58	.30	2:40 p. m.	20	.66	.30	1:30 p. m.	170	.97	0
1:00 a. m.	10	2.60	.12	2:50 p. m.	10	.72	.36	1:32 p. m.	2	.98	.30
1:15 a. m.	15	2.62	.08	3:00 p. m.	10	.75	.18	1:35 p. m.	3	1.08	2.00
1:30 a. m.	15	2.63	.04	3:20 p. m.	20	.77	.06	1:40 p. m.	5	1.09	.12
2:09 a. m.	39	2.63	0	3:40 p. m.	20	.78	.03	3:15 p. m.	95	1.09	0
2:10 a. m.	1	2.64	.60					3:20 p. m.	5	1.11	.24
2:50 a. m.	40	2.64	0					3:30 p. m.	10	1.13	.12
3:00 a. m.	10	2.67	.18					5:00 p. m.	90	1.13	0
3:10 a. m.	10	2.70	.18					5:20 p. m.	20	1.14	.03
3:20 a. m.	10	2.78	.48					5:40 p. m.	20	1.15	.03
3:30 a. m.	10	2.83	.30					7:20 p. m.	100	1.15	0
3:35 a. m.	5	2.87	.48					7:40 p. m.	20	1.18	.09
3:40 a. m.	5	2.89	.24					10:40 p. m.	180	1.18	0
								11:00 p. m. ³	20	1.20	.06

¹ Rain began.³ Rain ended.

TABLE 100.—*Rainfall at station 14¹ for selected storms, 1939*

STORM OF FEB. 14-15				STORM OF JUNE 18-19—Continued				STORM OF JULY 8—Continued			
Date and time	Time interval	Accumulated depth	Intensity	Date and time	Time interval	Accumulated depth	Intensity	Date and time	Time interval	Accumulated depth	Intensity
Feb. 14:				June 18—Con.				July 8—Con.			
8:30 p. m. ²	Min.	In.	In. per hr.	11:30 a. m.	Min.	In.	In. per hr.	7:38 a. m.	Min.	In.	In. per hr.
8:45 p. m.	15	.01	0.04	11:40 a. m.	10	1.30	0.78	7:40 a. m.	1	0.10	1.80
9:00 p. m.	15	.03	.08	11:50 a. m.	10	1.09	.36	7:43 a. m.	2	.18	2.40
9:15 p. m.	15	.04	.04	12:00 m.	10	1.13	.24	7:50 a. m.	3	.25	1.40
9:30 p. m.	15	.05	.04	12:04 p. m.	10	1.18	.30	7:56 a. m.	7	.26	.08
9:45 p. m.	15	.06	.04	12:10 p. m.	4	1.19	.15	7:56 a. m.	6	.26	0
10:00 p. m.	15	.07	.04	12:14 p. m.	6	1.21	.20	8:00 a. m.	4	.36	1.50
10:15 p. m.	15	.08	.04	12:14 p. m.	4	1.21	0	8:04 a. m.	4	.41	.75
10:30 p. m.	15	.10	.08	12:20 p. m.	6	1.26	.50	8:10 a. m.	6	.43	.20
10:45 p. m.	15	.12	.08	12:30 p. m.	10	1.35	.54	10:44 a. m.	154	.43	0
11:00 p. m.	15	.15	.12	12:35 p. m.	5	1.39	.48	10:47 a. m.	3	.45	.40
11:15 p. m.	15	.17	.08	12:40 p. m.	5	1.40	.12	10:50 a. m.	3	.48	.60
11:30 p. m.	15	.19	.08	4:46 p. m.	246	1.40	0	12:42 p. m.	112	.48	0
11:45 p. m.	15	.22	.12	5:00 p. m.	14	1.43	.13	12:44 p. m.	2	.56	2.40
12:00 p. m.	15	.26	.16	5:27 p. m.	27	1.43	0	12:46 p. m.	2	.59	.90
Feb. 15:				5:40 p. m.	13	1.44	.04	12:48 p. m.	2	.74	4.50
12:15 a. m.	15	.27	.04	6:00 p. m.	20	1.46	.20	12:50 p. m.	2	.87	3.90
12:30 a. m.	15	.31	.16	6:44 p. m.	44	1.46	0	12:52 p. m.	2	1.01	4.20
12:45 a. m.	15	.34	.12	6:46 p. m.	2	1.48	.60	12:54 p. m.	2	1.07	1.80
1:00 a. m.	15	.40	.24	6:50 p. m.	4	1.50	.30	12:56 p. m.	2	1.14	2.10
1:15 a. m.	15	.45	.20	6:56 p. m.	6	1.50	0	1:00 p. m.	4	1.19	.75
1:30 a. m.	15	.53	.32	7:00 p. m.	4	1.55	.75	1:10 p. m.	10	1.21	.12
1:40 a. m.	10	.59	.36	7:10 p. m.	10	1.60	.30	1:20 p. m.	10	1.23	.12
1:50 a. m.	10	.65	.36	7:20 p. m.	10	1.63	.18	1:50 p. m.	30	1.23	0
2:00 a. m.	10	.69	.24	7:30 p. m.	10	1.64	.06	2:00 p. m.	10	1.25	.12
2:10 a. m.	10	.74	.30	7:36 p. m.	6	1.66	.20	2:10 p. m. ³	10	1.26	.06
2:20 a. m.	10	.77	.18	7:40 p. m.	4	1.70	.60				
2:30 a. m.	10	.82	.30	7:44 p. m.	4	1.72	.30				
2:40 a. m.	10	.86	.24	7:50 p. m.	6	1.73	.10				
2:50 a. m.	10	.90	.24	8:00 p. m.	10	1.74	.06				
3:00 a. m.	10	.95	.30	9:39 p. m.	99	1.74	0				
3:10 a. m.	10	.99	.24	9:40 p. m.	1	1.75	.60				
3:20 a. m.	10	1.03	.24	9:50 p. m.	10	1.80	.30				
3:30 a. m.	10	1.05	.12	10:00 p. m.	10	1.82	.12				
3:40 a. m.	10	1.08	.18	10:10 p. m.	10	1.84	.12				
3:50 a. m.	10	1.10	.12	10:16 p. m.	6	1.86	.20				
4:00 a. m.	10	1.12	.12	10:50 p. m.	34	1.86	0				
4:20 a. m.	20	1.14	.06	11:00 p. m.	10	1.88	.12				
4:40 a. m.	20	1.16	.06	11:10 p. m.	10	1.88	0				
5:00 a. m.	20	1.18	.06	11:20 p. m.	10	1.89	.06				
5:20 a. m.	20	1.19	.03	11:30 p. m.	10	1.90	.06				
5:40 a. m.	20	1.20	.03	11:40 p. m.	10	1.92	.12				
7:30 a. m.	110	1.20	0	11:47 p. m.	7	1.92	0				
8:00 a. m.	30	1.22	.04	11:50 p. m.	3	1.94	.40				
8:20 a. m.	20	1.23	.03	12:00 p. m.	10	1.98	.24				
8:40 a. m.	20	1.24	.03	June 19:							
9:00 a. m.	20	1.25	.03	12:08 a. m.	8	2.00	.15				
9:20 a. m.	20	1.26	.03	12:10 a. m.	2	2.01	.30				
10:00 a. m.	40	1.26	0	12:16 a. m.	6	2.07	.60				
10:30 a. m.	30	1.27	.02	12:20 a. m.	4	2.08	.15				
11:00 a. m.	30	1.28	.02	12:28 a. m.	3	2.09	.20				
11:30 a. m.	30	1.29	.02	12:30 a. m.	7	2.14	.43				
12:00 m.	30	1.30	.02	12:40 a. m.	10	2.19	.30				
12:30 p. m.	30	1.31	.02	12:50 a. m.	10	2.20	.06				
1:00 p. m.	30	1.32	.02	1:00 a. m.	10	2.23	.18				
1:30 p. m.	30	1.34	.04	1:10 a. m.	10	2.26	.18				
2:00 p. m. ³	30	1.35	.02	2:34 a. m.	84	2.26	0				
STORM OF JUNE 18-19				2:40 a. m.	6	2.28	.20				
June 18:				2:50 a. m.	10	2.30	.12				
7:40 a. m. ²	10	0	0	3:00 a. m.	10	2.34	.24				
7:50 a. m.	10	.03	.18	3:10 a. m.	10	2.40	.36				
8:00 a. m.	10	.05	.12	3:20 a. m.	10	2.48	.48				
8:10 a. m.	10	.08	.18	3:30 a. m.	10	2.53	.30				
8:20 a. m.	10	.09	.06	3:40 a. m.	10	2.56	.18				
8:30 a. m.	10	.11	.12	3:50 a. m.	10	2.57	.06				
8:40 a. m.	10	.12	.06	4:00 a. m.	10	2.58	.06				
8:48 a. m.	8	.14	.15	4:10 a. m.	10	2.59	.06				
8:50 a. m.	2	.16	.60	4:20 a. m.	10	2.62	.18				
8:56 a. m.	6	.20	.40	4:30 a. m.	10	2.63	.06				
9:00 a. m.	4	.25	.75	5:00 a. m.	30	2.63	0				
9:08 a. m.	8	.28	.23	5:30 a. m.	30	2.64	.02				
9:10 a. m.	2	.30	.60	6:00 a. m.	30	2.64	0				
9:20 a. m.	10	.33	.18	6:30 a. m.	30	2.65	.02				
9:30 a. m.	10	.34	.06	7:00 a. m.	30	2.66	.02				
9:40 a. m.	10	.37	.18	7:30 a. m.	30	2.66	0				
9:50 a. m.	10	.41	.24	8:00 a. m.	30	2.67	.02				
10:00 a. m.	10	.44	.18	8:06 a. m.	6	2.68	.10				
10:10 a. m.	10	.46	.12	8:08 a. m.	2	2.70	.60				
10:20 a. m.	10	.48	.12	8:10 a. m.	2	2.70	0				
10:29 a. m.	9	.51	.20	8:15 a. m.	5	2.72	.24				
10:30 a. m.	1	.52	.60	8:17 a. m.	2	2.73	.30				
10:34 a. m.	4	.54	.30	8:18 a. m.	1	2.75	1.20				
10:40 a. m.	6	.56	.20	8:20 a. m. ³	2	2.77	.60				
10:50 a. m.	10	.58	.12	STORM OF JULY 8							
11:00 a. m.	10	.63	.30	July 8:							
11:04 a. m.	4	.66	.45	5:10 a. m. ²	2	0	0				
11:10 a. m.	6	.75	.90	5:12 a. m.	2	.03	.90				
11:16 a. m.	6	.87	1.20	5:15 a. m.	3	.07	.80				
11:20 a. m.	4	.90	.45	7:37 a. m.	142	.07	0				

¹ For location of rainfall station see fig. 1.

² Rain began.

³ Rain ended.

TABLE 100.—Rainfall at station 14 for selected storms, 1939—Continued

Date and time	Time interval	Accumulated depth	Intensity	Date and time	Time interval	Accumulated depth	Intensity	Date and time	Time interval	Accumulated depth	Intensity
STORM OF OCT. 25-27—Continued				STORM OF OCT. 25-27—Continued				STORM OF OCT. 25-27—Continued			
Oct. 25—Con.	Min.	In.	In. per hr.	Oct. 27—Con.	Min.	In.	In. per hr.	Oct. 27—Con.	Min.	In.	In. per hr.
6:32 p. m.	12	1.36	0.15	4:04 a. m.	4	0.02	0.15	8:14 a. m.	4	0.75	1.05
6:40 p. m.	8	1.36	0	4:10 a. m.	6	.04	.20	8:20 a. m.	6	.77	.20
7:00 p. m.	20	1.37	.03	4:20 a. m.	10	.07	.18	8:30 a. m.	10	.78	.06
7:20 p. m.	20	1.39	.06	4:22 a. m.	2	.08	.30	8:40 a. m.	10	.79	.06
7:40 p. m.	20	1.40	.03	4:30 a. m.	8	.09	.08	8:44 a. m.	4	.80	.15
9:40 p. m.	120	1.40	0	4:34 a. m.	4	.10	.15	8:50 a. m.	6	.83	.30
10:00 p. m.	20	1.41	.03	4:40 a. m.	6	.14	.40	9:20 a. m.	30	.83	0
10:20 p. m.	20	1.41	0	4:43 a. m.	3	.20	1.20	9:22 a. m.	2	.84	.30
10:29 p. m.	9	1.42	.06	4:47 a. m.	4	.25	.75	9:27 a. m.	5	.90	.72
10:33 p. m.	4	1.52	1.50	4:50 a. m.	3	.27	.40	9:29 a. m.	2	.94	1.29
10:37 p. m.	4	1.54	.30	4:54 a. m.	4	.36	1.35	9:30 a. m.	1	.97	1.80
10:39 p. m.	2	1.58	1.20	4:57 a. m.	3	.39	.60	9:31 a. m.	1	.99	1.20
10:40 p. m.	1	1.67	5.40	4:59 a. m.	2	.46	2.10	9:40 a. m.	9	1.01	.13
10:41 p. m.	1	1.70	1.80	5:00 a. m.	1	.47	.60	10:00 a. m.	20	1.01	0
10:45 p. m.	4	1.73	.45	5:04 a. m.	4	.49	.30	11:00 a. m.	60	1.02	.01
10:56 p. m.	11	1.75	.11	5:08 a. m.	4	.53	.60	12:00 m.	60	1.02	0
11:00 p. m.	4	1.75	0	5:10 a. m.	2	.54	.30	12:20 p. m.	20	1.03	.03
12:00 p. m.	60	1.76	.01	5:20 a. m.	10	.55	.06	1:23 p. m.	63	1.03	0
Oct. 26:				5:23 a. m.	3	.56	.20	1:24 p. m.	1	1.06	1.80
1:00 a. m.	60	1.77	.01	5:30 a. m.	7	.57	.08	1:30 p. m.	6	1.06	0
1:24 a. m.	24	1.77	0	6:00 a. m.	30	.58	.02	1:33 p. m.	3	1.07	.20
1:25 a. m.	1	1.79	1.20	6:20 a. m.	20	.59	.03	1:34 p. m.	1	1.13	3.60
2:00 a. m.	35	1.81	.03	6:40 a. m.	20	.59	0	1:37 p. m.	3	1.18	1.00
8:27 a. m.	387	1.81	0	7:00 a. m.	20	.60	.03	3:13 p. m.	96	1.18	0
8:28 a. m.	1	1.82	.60	7:20 a. m.	20	.61	.03	3:17 p. m.	4	1.20	.30
8:31 a. m.	3	1.83	.20	7:50 a. m.	30	.61	0	3:20 p. m.	3	1.21	.20
8:33 a. m.	2	1.91	2.40	7:53 a. m.	3	.62	.20	3:30 p. m.	10	1.22	.06
8:35 a. m.	2	2.07	4.80	7:58 a. m.	5	.64	.24	5:00 p. m.	90	1.22	0
8:37 a. m.	2	2.18	3.30	8:00 a. m.	2	.65	.30	6:00 p. m.	60	1.23	.01
Oct. 27:				8:05 a. m.	5	.65	0	7:00 p. m.	60	1.26	.03
3:50 a. m. ¹	-----	0	0	8:06 a. m.	1	.67	1.20	7:47 p. m.	47	1.26	0
4:00 a. m.	10	.01	.06	8:10 a. m.	4	.68	.15	7:48 p. m. ²	1	1.27	.60

¹ Rain began.² Rain ended.TABLE 101.—Rainfall at station 27¹ for selected storms, 1939

Date and time	Time interval	Accumulated depth	Intensity	Date and time	Time interval	Accumulated depth	Intensity	Date and time	Time interval	Accumulated depth	Intensity
STORM OF FEB. 14-15				STORM OF FEB. 14-15—Continued				STORM OF JUNE 18-19—Continued			
Feb. 14:	Min.	In.	In. per hr.	Feb. 15—Con.	Min.	In.	In. per hr.	June 18—Con.	Min.	In.	In. per hr.
8:20 p. m. ¹	-----	0	-----	7:30 a. m.	30	1.26	0.02	11:02 a. m.	2	0.81	0.30
8:40 p. m.	20	.02	0.06	8:00 a. m.	30	1.26	0	11:10 a. m.	8	.91	.75
9:00 p. m.	20	.04	.06	8:15 a. m.	15	1.27	.04	11:14 a. m.	4	1.00	1.35
9:20 p. m.	20	.06	.06	8:30 a. m.	15	1.28	.04	11:20 a. m.	6	1.07	.70
9:40 p. m.	20	.07	.03	9:00 a. m.	30	1.29	.02	11:30 a. m.	10	1.22	.90
10:00 p. m.	20	.08	.03	9:30 a. m.	30	1.30	.02	11:40 a. m.	10	1.33	.66
10:20 p. m.	20	.09	.03	10:00 a. m. ⁴	30	1.31	.02	11:50 a. m.	10	1.39	.36
10:40 p. m.	20	.12	.09	STORM OF JUNE 18-19				11:55 a. m.	5	1.41	.24
11:00 p. m.	20	.15	.09	June 18:				12:00 m.	5	1.45	.48
11:20 p. m.	20	.18	.09	7:30 a. m.	-----	0	0	12:10 p. m.	10	1.46	.06
11:40 p. m.	20	.22	.12	7:40 a. m.	10	.02	.12	12:20 p. m.	10	1.50	.24
12:00 p. m.	20	.25	.09	7:50 a. m.	10	.05	.18	12:26 p. m.	6	1.53	.80
Feb. 15:				8:00 a. m.	10	.09	.24	12:30 p. m.	4	1.61	.45
12:10 a. m.	10	.27	.12	8:10 a. m.	10	.12	.18	12:40 p. m.	10	1.65	.24
12:20 a. m.	10	.30	.18	8:20 a. m.	10	.13	.06	12:50 p. m.	10	1.66	.06
12:30 a. m.	10	.33	.18	8:30 a. m.	10	.15	.12	1:00 p. m.	10	1.67	.06
12:40 a. m.	10	.35	.12	8:40 a. m.	10	.16	.06	2:38 p. m.	98	1.67	0
12:50 a. m.	10	.38	.18	8:43 a. m.	3	.16	0	2:40 p. m.	2	1.69	.60
1:00 a. m.	10	.44	.36	8:46 a. m.	3	.20	.80	4:44 p. m.	124	1.69	0
1:10 a. m.	10	.48	.24	8:48 a. m.	2	.21	.30	5:00 p. m.	6	1.71	.20
1:20 a. m.	10	.53	.30	8:50 a. m.	2	.23	.60	5:30 p. m.	30	1.71	0
1:30 a. m.	10	.61	.48	8:52 a. m.	2	.24	.30	5:40 p. m.	10	1.72	.06
1:40 a. m.	10	.66	.30	8:56 a. m.	4	.36	1.80	6:00 p. m.	20	1.73	.03
1:50 a. m.	10	.71	.30	8:57 a. m.	1	.38	1.20	6:42 p. m.	42	1.73	0
2:00 a. m.	10	.77	.36	9:00 a. m.	3	.39	.20	6:50 p. m.	8	1.79	.45
2:10 a. m.	10	.82	.30	9:05 a. m.	5	.40	.12	7:00 p. m.	10	1.84	.30
2:20 a. m.	10	.87	.30	9:08 a. m.	3	.45	1.00	7:10 p. m.	10	1.88	.24
2:30 a. m.	10	.92	.30	9:10 a. m.	2	.46	.30	7:20 p. m.	10	1.92	.24
2:40 a. m.	10	.97	.30	9:20 a. m.	10	.48	.12	7:30 p. m.	10	1.95	.18
2:50 a. m.	10	1.00	.18	9:30 a. m.	10	.51	.18	7:40 p. m.	10	1.96	.06
3:00 a. m.	10	1.03	.18	9:40 a. m.	10	.54	.18	7:50 p. m.	10	1.98	.12
3:15 a. m.	15	1.07	.16	9:50 a. m.	10	.57	.18	8:00 p. m.	10	1.99	.06
3:30 a. m.	15	1.11	.16	10:00 a. m.	10	.61	.24	8:10 p. m.	10	2.00	.06
3:45 a. m.	15	1.14	.12	10:10 a. m.	10	.63	.12	9:35 p. m.	85	2.00	0
4:00 a. m.	15	1.17	.12	10:20 a. m.	10	.66	.18	9:40 p. m.	5	2.03	.36
4:15 a. m.	15	1.19	.08	10:30 a. m.	10	.72	.36	9:50 p. m.	10	2.07	.24
4:30 a. m.	15	1.20	.04	10:40 a. m.	10	.75	.18	10:00 p. m.	10	2.09	.12
4:45 a. m.	15	1.21	.04	10:50 a. m.	10	.76	.06	10:10 p. m.	10	2.12	.18
5:00 a. m.	15	1.22	.04	11:00 a. m.	10	.80	.24	10:20 p. m.	10	2.13	.06
5:15 a. m.	15	1.23	.04					10:30 p. m.	10	2.14	.06
5:30 a. m.	15	1.24	.04					10:50 p. m.	20	2.14	0
6:27 a. m. ³	57	1.24	0					11:00 p. m.	10	2.15	.06
7:00 a. m.	33	1.25	.02					11:10 p. m.	10	2.16	.06

¹ For location of rainfall station see fig. 1.² Rain began.³ Rain changed to snow.⁴ Snow ended.

TABLE 101.—Rainfall at station 27 for selected storms, 1939—Continued

Date and time	Time interval	Accumulated depth	Intensity	Date and time	Time interval	Accumulated depth	Intensity	Date and time	Time interval	Accumulated depth	Intensity
STORM OF JUNE 18-19—Continued				STORM OF JULY 8—Continued				STORM OF OCT. 25-27—Continued			
June 18—Con.	Min.	In.	In. per hr.	July 8—Con.	Min.	In.	In. per hr.	Oct. 25—Con.	Min.	In.	In. per hr.
11:20 p. m.	10	2.17	0.06	1:50 p. m.	30	1.82	0	10:40 p. m.	6	1.67	1.00
11:30 p. m.	10	2.18	.06	2:00 p. m.	10	1.83	.06	10:41 p. m.	1	1.70	1.80
11:35 p. m.	5	2.20	.24	2:10 p. m.	10	1.85	.12	10:42 p. m.	1	1.71	.60
11:40 p. m.	5	2.21	.12	2:20 p. m.	10	1.86	.06	10:43 p. m.	1	1.75	2.40
11:50 p. m.	10	2.23	.12					10:44 p. m.	1	1.77	1.20
12:00 m.	10	2.29	.36					10:47 p. m.	3	1.78	.20
June 19:				STORM OF OCT. 25-27				10:49 p. m.	2	1.80	.60
12:10 a. m.	10	2.32	.18	Oct. 25:				10:54 p. m.	5	1.81	.12
12:12 a. m.	2	2.33	.30	12:22 a. m. ¹	2	0	0	11:20 p. m.	26	1.81	0
12:20 a. m.	8	2.41	.60	12:24 a. m.	2	.01	.30	11:40 p. m.	20	1.82	.03
12:30 a. m.	10	2.56	.90	12:25 a. m.	1	.04	1.80	12:00 p. m.	20	1.82	0
12:32 a. m.	2	2.59	.90	12:30 a. m.	5	.13	1.08	Oct. 26:			
12:40 a. m.	8	2.64	.38	12:36 a. m.	6	.15	.20	12:20 a. m.	20	1.83	.03
12:50 a. m.	10	2.68	.24	4:20 a. m.	224	.15	0	1:00 a. m.	40	1.83	0
1:00 a. m.	10	2.70	.12	4:40 a. m.	20	.16	.03	1:20 a. m.	20	1.84	.03
1:10 a. m.	10	2.71	.06	5:00 a. m.	20	.16	0	1:26 a. m.	6	1.84	0
1:20 a. m.	10	2.72	.06	5:20 a. m.	20	.17	.03	1:28 a. m.	2	1.87	.90
2:10 a. m.	50	2.72	0	5:27 a. m.	7	.17	0	1:40 a. m.	12	1.89	.10
2:20 a. m.	10	2.73	.06	5:29 a. m.	2	.18	.30	2:00 a. m.	20	1.90	.03
2:30 a. m.	10	2.73	0	5:40 a. m.	11	.19	.05	2:10 a. m.	10	1.90	0
2:40 a. m.	10	2.74	.06	6:00 a. m.	20	.19	0	2:14 a. m.	4	1.91	.15
2:50 a. m.	10	2.75	.06	6:20 a. m.	20	.20	.03	2:20 a. m.	6	1.92	.10
3:00 a. m.	10	2.77	.12	6:40 a. m.	20	.20	0	8:24 a. m.	364	1.92	0
3:10 a. m.	10	2.81	.24	7:00 a. m.	20	.22	.06	8:26 a. m.	2	1.94	.60
3:20 a. m.	10	2.84	.18	7:20 a. m.	20	.26	.12	8:30 a. m.	4	1.94	0
3:30 a. m.	10	2.87	.18	7:30 a. m.	10	.28	.12	8:33 a. m.	3	1.96	.40
3:40 a. m.	10	2.89	.12	7:40 a. m.	10	.29	.06	8:36 a. m.	3	1.96	0
3:50 a. m.	10	2.91	.12	7:43 a. m.	10	.29	0	8:38 a. m.	2	2.11	4.50
4:00 a. m.	10	2.92	.06	8:00 a. m.	20	.30	.03	8:40 a. m.	2	2.27	4.80
4:10 a. m.	10	2.93	.06	8:20 a. m.	20	.31	.03	8:41 a. m.	1	2.41	8.40
4:20 a. m.	10	2.94	.06	8:40 a. m.	20	.32	.03	8:43 a. m.	2	2.61	6.00
4:30 a. m.	10	2.95	.06	9:00 a. m.	20	.34	.06	8:45 a. m.	2	2.74	3.90
5:00 a. m.	30	2.95	0	9:20 a. m.	20	.36	.06	8:47 a. m.	2	2.79	1.50
5:30 a. m.	30	2.96	.02	9:40 a. m.	20	.36	.06	8:50 a. m.	3	2.81	.40
6:00 a. m.	30	2.97	.02	9:43 a. m.	3	.36	0	9:00 a. m. ³	10	2.82	.06
7:00 a. m.	60	2.97	0	9:45 a. m.	2	.38	.60	Oct. 27:			
7:30 a. m.	30	2.99	.04	9:55 a. m.	10	.41	.18	4:00 a. m. ²	7	0	0
7:40 a. m.	10	3.01	.12	10:00 a. m.	5	.42	.12	4:07 a. m.	7	.02	.17
7:50 a. m.	10	3.03	.12	10:20 a. m.	20	.44	.06	4:10 a. m.	3	.03	.20
8:00 a. m.	10	3.04	.06	10:40 a. m.	20	.46	.06	4:14 a. m.	4	.05	.30
8:10 a. m.	10	3.06	.12	11:00 a. m.	20	.46	0	4:20 a. m.	6	.08	.30
8:20 a. m.	10	3.07	.06	12:00 m.	60	.47	.01	4:24 a. m.	4	.09	.15
8:30 a. m. ¹	10	3.08	.06	1:00 p. m.	60	.48	.01	4:30 a. m.	6	.11	.20
STORM OF JULY 8				1:20 p. m.	20	.51	.09	4:35 a. m.	5	.11	0
July 8:				1:40 p. m.	20	.52	.03	4:40 a. m.	5	.15	.48
5:06 a. m. ¹	-----	0	0	2:00 p. m.	20	.53	.03	4:44 a. m.	4	.21	.90
5:07 a. m.	1	.06	3.60	2:20 p. m.	20	.57	.12	4:50 a. m.	6	.29	.80
5:09 a. m.	2	.08	.60	2:25 p. m.	5	.58	.12	4:55 a. m.	5	.34	.60
5:10 a. m.	1	.10	1.20	2:35 p. m.	10	.62	.24	4:58 a. m.	3	.40	1.20
5:12 a. m.	2	.15	1.50	2:40 p. m.	5	.66	.48	5:00 a. m.	2	.47	2.10
5:18 a. m.	6	.21	.60	2:41 p. m.	1	.68	1.20	5:07 a. m.	7	.51	.34
5:20 a. m.	2	.22	.30	3:00 p. m.	19	.76	.25	5:10 a. m.	3	.52	.20
5:30 a. m.	10	.23	.06	3:20 p. m.	20	.81	.15	5:20 a. m.	10	.54	.12
7:38 a. m.	128	.23	0	3:40 p. m.	20	.81	0	5:27 a. m.	7	.55	.08
7:40 a. m.	2	.38	4.50	4:00 p. m.	20	.83	.06	6:00 a. m.	33	.56	.02
7:44 a. m.	4	.58	2.25	4:17 p. m.	17	.92	.32	6:50 a. m.	50	.58	.02
7:45 a. m.	1	.53	3.00	4:20 p. m.	3	.95	.60	6:55 a. m.	5	.59	.12
7:49 a. m.	4	.72	2.10	4:22 p. m.	2	.97	.60	7:00 a. m.	5	.60	.12
7:50 a. m.	1	.73	.60	4:40 p. m.	18	1.08	.37	7:48 a. m.	48	.62	.03
7:52 a. m.	2	.73	0	4:42 p. m.	2	1.10	.60	7:53 a. m.	5	.63	.12
7:53 a. m.	1	.77	2.40	4:45 p. m.	3	1.12	.40	7:58 a. m.	5	.67	.48
7:58 a. m.	5	.78	.12	4:47 p. m.	2	1.14	.60	8:10 a. m.	12	.67	0
8:00 a. m.	2	.80	.60	5:00 p. m.	13	1.18	.18	8:14 a. m.	4	.72	.75
8:02 a. m.	2	.87	2.10	5:20 p. m.	20	1.26	.24	8:18 a. m.	4	.74	.30
8:04 a. m.	2	.91	1.20	5:26 p. m.	6	1.28	.20	8:20 a. m.	2	.75	.30
8:06 a. m.	2	.96	1.50	5:40 p. m.	14	1.31	.13	8:25 a. m.	5	.79	.48
8:10 a. m.	4	.99	.45	5:55 p. m.	15	1.33	.08	8:30 a. m.	5	.80	.12
8:11 a. m.	1	1.00	.60	5:57 p. m.	2	1.34	.30	8:35 a. m.	5	.80	0
10:46 a. m.	155	1.00	0	6:00 p. m.	3	1.38	.80	8:40 a. m.	5	.81	.12
10:50 a. m.	4	1.03	.45	6:02 p. m.	2	1.40	.60	8:46 a. m.	6	.82	.10
10:52 a. m.	2	1.04	.30	6:14 p. m.	12	1.42	.10	8:50 a. m.	4	.82	0
12:45 p. m.	113	1.04	0	6:17 p. m.	3	1.45	.60	8:53 a. m.	3	.83	.20
12:48 p. m.	3	1.19	3.00	6:20 p. m.	3	1.46	.20	9:20 a. m.	27	.83	0
12:50 p. m.	2	1.32	3.90	6:29 p. m.	9	1.49	.19	9:25 a. m.	5	.87	.48
12:52 p. m.	2	1.50	5.40	6:40 p. m.	11	1.50	.06	9:29 a. m.	4	.92	.75
12:54 p. m.	2	1.61	3.30	7:00 p. m.	20	1.50	0	9:30 a. m.	1	.98	3.60
1:00 p. m.	6	1.75	1.40	7:20 p. m.	20	1.52	.06	9:32 a. m.	2	1.03	1.50
1:06 p. m.	6	1.79	.40	7:40 p. m.	20	1.53	.03	9:34 a. m.	2	1.06	.90
1:10 p. m.	4	1.80	.15	8:00 p. m.	20	1.55	.06	10:00 a. m.	26	1.07	.02
1:20 p. m.	10	1.82	.12	9:40 p. m.	100	1.55	0	11:00 a. m.	60	1.08	.01
				10:00 p. m.	20	1.56	.03	12:00 m.	60	1.09	.01
				10:20 p. m.	20	1.57	.03	1:00 p. m.	60	1.09	0
				10:34 p. m.	14	1.57	0	1:20 p. m. ⁴	20	1.10	.03

¹ Rain began.³ Rain ended.⁴ Rain changed to snow.

TABLE 102.—Rainfall at station 44¹ for selected storms, 1939

Date and time	Time interval	Accumulated depth	Intensity	Date and time	Time interval	Accumulated depth	Intensity	Date and time	Time interval	Accumulated depth	Intensity
STORM OF FEB. 14-15				STORM OF JULY 8—Continued				STORM OF OCT. 25-27—Continued			
Feb. 14:	Min.	In.	In. per hr.	July 8—Con.	Min.	In.	In. per hr.	Oct. 25—Con.	Min.	In.	In. per hr.
8:20 p. m. ²		0		8:10 a. m.	2	1.28	0.30	10:34 p. m.	1	1.69	1.20
8:30 p. m.	10	.02	0.12	8:14 a. m.	4	1.29	.15	10:35 p. m.	1	1.71	1.20
8:45 p. m.	15	.03	.04	STORM OF OCT. 25-27				10:40 p. m.	5	1.83	1.44
9:00 p. m.	15	.04	.04					10:42 p. m.	2	1.85	.60
9:15 p. m.	15	.06	.08					10:45 p. m.	3	1.86	.20
9:30 p. m.	15	.07	.04					10:47 p. m.	2	1.87	.30
9:45 p. m.	15	.08	.04					10:50 p. m.	3	1.90	.60
10:00 p. m.	15	.09	.04					11:00 p. m.	10	1.90	0
10:15 p. m.	15	.10	.04					12:00 p. m.	60	1.92	.02
10:30 p. m.	15	.11	.04					Oct. 26:			
10:45 p. m.	15	.13	.08					1:25 a. m.	85	1.92	0
11:00 p. m.	15	.16	.12					1:27 a. m.	2	1.94	.60
11:15 p. m.	15	.18	.08					1:30 a. m.	3	1.95	.20
11:30 p. m.	15	.20	.08					2:10 a. m.	40	1.95	0
11:45 p. m.	15	.23	.12					2:15 a. m.	5	1.96	.12
12:00 p. m.	15	.25	.08					8:21 a. m.	366	1.96	0
Feb. 15:								8:25 a. m.	4	1.97	.15
12:15 a. m.	15	.28	.12					8:34 a. m.	9	1.97	0
12:30 a. m.	15	.32	.16					8:35 a. m.	1	1.98	.60
12:45 a. m.	15	.35	.12					8:39 a. m.	4	2.13	2.25
12:50 a. m.	5	.37	.24					8:40 a. m.	1	2.18	3.00
1:00 a. m.	10	.41	.24					8:45 a. m.	5	2.43	3.00
1:15 a. m.	15	.46	.20					8:48 a. m. ³	3	2.61	3.60
1:30 a. m.	15	.54	.32					Oct. 27:			
1:45 a. m.	15	.61	.28					4:00 a. m. ³		0	0
2:00 a. m.	15	.67	.24					4:10 a. m.	10	.06	.36
2:10 a. m.	10	.72	.30					4:20 a. m.	10	.09	.18
2:20 a. m.	10	.76	.24					4:30 a. m.	10	.12	.18
2:30 a. m.	10	.80	.24					4:35 a. m.	5	.14	.24
2:40 a. m.	10	.84	.24					4:40 a. m.	5	.17	.36
2:50 a. m.	10	.88	.24					4:45 a. m.	5	.24	.84
3:00 a. m.	10	.91	.18					4:50 a. m.	5	.31	.84
3:10 a. m.	10	.94	.18					4:55 a. m.	5	.36	.60
3:20 a. m.	10	.96	.12					5:00 a. m.	5	.49	1.56
3:30 a. m.	10	1.00	.24					5:04 a. m.	4	.55	.90
3:40 a. m.	10	1.03	.18					5:05 a. m.	1	.56	.60
3:50 a. m.	10	1.04	.06					5:10 a. m.	5	.57	.12
4:00 a. m.	10	1.06	.12					5:20 a. m.	10	.60	.18
4:20 a. m.	20	1.07	.03					5:30 a. m.	10	.61	.06
4:40 a. m.	20	1.08	.03					6:00 a. m.	30	.62	.02
5:00 a. m.	20	1.09	.03					6:30 a. m.	30	.64	.04
5:20 a. m.	20	1.10	.03					6:49 a. m.	19	.64	0
7:00 a. m.	100	1.10	0					6:50 a. m.	1	.65	.60
7:20 a. m.	20	1.11	.03					6:53 a. m.	3	.66	.20
7:40 a. m.	20	1.12	.03					6:55 a. m.	2	.67	.30
8:00 a. m.	20	1.13	.03					7:20 a. m.	25	.67	0
8:20 a. m.	20	1.15	.06					7:30 a. m.	10	.68	.06
8:40 a. m.	20	1.15	0					7:40 a. m.	10	.69	.06
9:00 a. m.	20	1.16	.03					7:50 a. m.	10	.70	.06
9:20 a. m.	20	1.18	.06					7:53 a. m.	3	.72	.40
12:30 p. m.	190	1.18	0					7:55 a. m.	2	.73	.30
12:40 p. m.	10	1.19	.06					8:00 a. m.	5	.75	.24
12:50 p. m.	10	1.20	.06					8:05 a. m.	5	.77	.24
1:00 p. m.	10	1.21	.06					8:10 a. m.	5	.78	.12
1:10 p. m.	10	1.22	.06					8:15 a. m.	5	.81	.36
1:20 p. m. ³	10	1.25	.18					8:20 a. m.	5	.82	.12
STORM OF JUNE 18-19								8:25 a. m.	5	.85	.36
[Record missing]								8:30 a. m.	5	.86	.12
STORM OF JULY 8								8:40 a. m.	10	.88	.12
July 8:								8:50 a. m.	10	.90	.12
5:08 a. m. ²		0	0					8:55 a. m.	5	.93	.36
5:10 a. m.	2	.07	2.10					9:20 a. m.	25	.93	0
5:12 a. m.	2	.18	3.30					9:25 a. m.	5	.98	.60
5:14 a. m.	2	.23	1.50					9:28 a. m.	3	1.03	1.00
5:18 a. m.	4	.31	1.20					9:30 a. m.	2	1.06	.90
5:20 a. m.	2	.32	.30					9:32 a. m.	2	1.10	1.20
5:37 a. m.	137	.32	0					9:34 a. m.	2	1.15	1.50
5:38 a. m.	1	.39	4.20					9:35 a. m.	1	1.16	.60
5:40 a. m.	2	.57	5.40					9:40 a. m.	5	1.17	.12
5:42 a. m.	2	.58	.30					10:00 a. m.	20	1.17	0
7:44 a. m.	2	.62	1.20					10:05 a. m.	5	1.18	.12
7:47 a. m.	3	.67	1.00					10:23 a. m.	18	1.18	0
7:50 a. m.	3	.77	2.00					10:24 a. m.	1	1.20	1.20
7:54 a. m.	4	.98	3.15					12:30 p. m.	126	1.20	0
7:58 a. m.	4	1.02	.60					1:00 p. m.	30	1.21	.02
8:00 a. m.	2	1.13	3.30					1:30 p. m.	30	1.22	0
8:04 a. m.	4	1.20	1.05					1:35 p. m.	5	1.22	0
8:08 a. m.	4	1.27	1.05					1:37 p. m.	2	1.27	1.50
								1:40 p. m.	3	1.28	.20
								3:17 p. m.	97	1.28	0
								3:20 p. m.	3	1.30	.40
								3:21 p. m.	1	1.33	1.80
								3:25 p. m.	4	1.34	.15
								3:30 p. m.	5	1.35	.12
								5:00 p. m.	90	1.35	0
								5:30 p. m.	30	1.37	.04
								6:00 p. m. ³	30	1.38	.02

¹ For location of rainfall station, see fig. 1.² Rain began.³ Rain ended.

TABLE 103.—*Rainfall at station 47¹ for selected storms, 1939*

STORM OF FEB. 14-15				STORM OF JUNE 18-19-Continued				STORM OF JULY 8-Continued			
Date and time	Time interval	Accumulated depth	Intensity	Date and time	Time interval	Accumulated depth	Intensity	Date and time	Time interval	Accumulated depth	Intensity
STORM OF FEB. 14-15				STORM OF JUNE 18-19-Continued				STORM OF JULY 8-Continued			
Feb. 14:	Min.	In.	In. per hr.	June 18-Con.	Min.	In.	In. per hr.	July 8-Con.	Min.	In.	In. per hr.
8:20 p. m. ²		0	0	3:00 p. m.	60	1.43	0.01	8:04 a. m.	2	1.18	0.90
8:40 p. m.	20	.01	.03	4:45 p. m.	105	1.43	0	8:06 a. m.	2	1.20	.60
9:00 p. m.	20	.03	.06	4:50 p. m.	5	1.44	.12	8:08 a. m.	2	1.24	1.20
9:20 p. m.	20	.05	.06	4:55 p. m.	5	1.45	.12	8:10 a. m.	2	1.25	.30
9:40 p. m.	20	.06	.03	5:34 p. m.	39	1.45	0	8:14 a. m.	4	1.27	.30
10:00 p. m.	20	.07	.03	5:35 p. m.	1	1.46	.60	8:16 a. m.	2	1.28	.30
10:20 p. m.	20	.09	.06	5:40 p. m.	5	1.46	0	12:22 p. m.	246	1.28	0
10:40 p. m.	20	.11	.06	5:50 p. m.	10	1.47	.06	12:24 p. m.	2	1.29	.30
11:00 p. m.	20	.14	.09	6:40 p. m.	50	1.47	0	12:26 p. m.	2	1.35	1.80
11:20 p. m.	20	.17	.09	6:45 p. m.	5	1.48	.12	12:28 p. m.	2	1.41	1.80
11:40 p. m.	20	.21	.12	6:50 p. m.	5	1.52	.48	12:30 p. m.	2	1.46	1.50
12:00 p. m.	20	.24	.09	6:55 p. m.	5	1.53	.12	12:40 p. m.	10	1.47	.60
Feb. 15:				7:00 p. m.	5	1.57	.48	12:42 p. m.	2	1.47	0
12:20 a. m.	20	.29	.15	7:05 p. m.	5	1.62	.60	12:46 p. m.	4	1.50	.45
12:30 a. m.	10	.31	.12	7:10 p. m.	5	1.65	.36	12:50 p. m.	4	1.52	.30
12:40 a. m.	10	.33	.12	7:20 p. m.	10	1.67	.12	12:54 p. m.	4	1.55	.45
12:50 a. m.	10	.36	.18	7:30 p. m.	10	1.71	.24	12:56 p. m.	2	1.58	.90
1:00 a. m.	10	.41	.30	7:35 p. m.	5	1.73	.24	12:58 p. m.	2	1.62	1.20
1:10 a. m.	10	.45	.24	7:40 p. m.	5	1.75	.24	1:00 p. m.	2	1.66	1.20
1:20 a. m.	10	.50	.30	7:50 p. m.	10	1.78	.18	1:04 p. m.	4	1.70	.60
1:30 a. m.	10	.57	.42	8:00 p. m.	10	1.80	.12	1:10 p. m.	6	1.72	.20
1:40 a. m.	10	.64	.42	9:35 p. m.	95	1.80	0	1:20 p. m.	10	1.73	.06
1:50 a. m.	10	.70	.36	9:40 p. m.	5	1.81	.12	1:40 p. m.	20	1.73	0
2:00 a. m.	10	.75	.30	9:45 p. m.	5	1.85	.48	1:50 p. m.	10	1.74	.06
2:10 a. m.	10	.81	.36	9:50 p. m.	5	1.86	.12	2:00 p. m. ³	10	1.75	.06
2:20 a. m.	10	.86	.30	10:00 p. m.	10	1.88	.12				
2:30 a. m.	10	.91	.30	10:10 p. m.	10	1.90	.12				
2:40 a. m.	10	.96	.30	10:20 p. m.	10	1.91	.06				
2:50 a. m.	10	1.01	.30	10:50 p. m.	30	1.91	0				
3:00 a. m.	10	1.04	.18	11:00 p. m.	10	1.92	.06				
3:10 a. m.	10	1.07	.18	11:15 p. m.	15	1.93	.04				
3:20 a. m.	10	1.10	.18	11:30 p. m.	15	1.95	.08				
3:30 a. m.	10	1.12	.12	11:45 p. m.	15	1.96	.04				
3:40 a. m.	10	1.13	.06	11:50 p. m.	5	1.98	.24				
3:50 a. m.	10	1.14	.06	11:55 p. m.	5	2.00	.24				
4:00 a. m.	10	1.15	.06	12:00 p. m.	5	2.03	.36				
4:30 a. m.	30	1.16	.02	June 19:							
4:50 a. m.	30	1.17	.02	12:05 a. m.	5	2.04	.12				
5:30 a. m.	30	1.18	.02	12:10 a. m.	5	2.05	.12				
6:00 a. m.	30	1.19	.02	12:15 a. m.	5	2.07	.24				
8:00 a. m.	120	1.19	0	12:30 a. m.	15	2.10	.12				
8:30 a. m.	30	1.20	.02	12:45 a. m.	15	2.12	.08				
9:00 a. m.	30	1.21	.02	1:00 a. m.	15	2.14	.08				
11:00 a. m.	120	1.21	0	1:15 a. m.	15	2.14	0				
12:00 m.	60	1.22	.01	1:30 a. m.	15	2.15	.04				
12:30 p. m.	30	1.23	.02	2:30 a. m.	60	2.15	0				
12:40 p. m.	10	1.24	.06	2:45 a. m.	15	2.18	.12				
12:50 p. m.	10	1.26	.12	3:00 a. m.	15	2.22	.16				
1:00 p. m. ³	10	1.27	.06	3:10 a. m.	10	2.24	.12				
STORM OF JUNE 18-19				3:20 a. m.	10	2.31	.42				
				3:30 a. m.	10	2.35	.24				
				3:45 a. m.	15	2.37	.08				
				4:00 a. m.	15	2.39	.08				
				4:15 a. m.	15	2.40	.04				
				4:20 a. m.	5	2.41	.12				
				4:25 a. m.	5	2.42	.12				
				4:30 a. m.	5	2.43	.12				
				5:30 a. m.	60	2.43	0				
				6:00 a. m.	30	2.44	.02				
				6:30 a. m.	30	2.45	.02				
				7:00 a. m.	30	2.46	.02				
				7:30 a. m.	30	2.47	.02				
				8:00 a. m.	30	2.53	.12				
				8:10 a. m.	10	2.54	.06				
				8:20 a. m. ³	10	2.55	.06				
				STORM OF JULY 8							
				July 8:							
				5:04 a. m. ²		0	0				
				5:08 a. m.	4	.12	1.80				
				5:10 a. m.	2	.21	2.70				
				5:12 a. m.	2	.26	1.50				
				5:14 a. m.	2	.39	3.90				
				5:15 a. m.	1	.47	4.80				
				5:16 a. m.	1	.48	.60				
				7:34 a. m.	138	.48	0				
				7:36 a. m.	2	.53	1.50				
				7:38 a. m.	2	.59	1.80				
				7:40 a. m.	2	.65	1.80				
				7:42 a. m.	2	.69	1.20				
				7:43 a. m.	1	.70	.60				
				7:44 a. m.	1	.73	1.80				
				7:46 a. m.	2	.83	3.00				
				7:48 a. m.	2	.89	1.80				
				7:50 a. m.	2	.93	1.20				
				7:54 a. m.	4	.98	.75				
				7:56 a. m.	2	1.04	1.80				
				7:58 a. m.	2	1.05	.30				
				8:00 a. m.	2	1.09	1.20				
				8:02 a. m.	2	1.15	1.80				

¹ For location of rainfall station see fig. 1.

² Rain began.

8 Rain ended.

TABLE 103.—Rainfall at station 47 for selected storms, 1939—Continued

Date and time	Time interval	Accumulated depth	Intensity	Date and time	Time interval	Accumulated depth	Intensity	Date and time	Time interval	Accumulated depth	Intensity
STORM OF OCT. 25-27—Continued				STORM OF OCT. 25-27—Continued				STORM OF OCT. 25-27—Continued			
Oct. 25—Con.	Min.	In.	In. per hr.	Oct. 27—Con.	Min.	In.	In. per hr.	Oct. 27—Con.	Min.	In.	In. per hr.
4:38 p. m.	3	1.18	0.40	4:00 a. m.	3	0.01	0.20	8:10 a. m.	2	0.75	0.30
4:40 p. m.	2	1.20	.60	4:10 a. m.	10	.06	.30	8:15 a. m.	5	.77	.24
4:45 p. m.	5	1.22	.24	4:20 a. m.	10	.10	.24	8:20 a. m.	5	.80	.36
5:00 p. m.	15	1.27	.20	4:30 a. m.	10	.12	.12	8:25 a. m.	5	.81	.12
5:15 p. m.	15	1.34	.28	4:35 a. m.	5	.15	.36	8:30 a. m.	5	.82	.12
5:30 p. m.	15	1.38	.16	4:40 a. m.	5	.21	.72	8:40 a. m.	10	.83	.06
5:45 p. m.	15	1.40	.08	4:42 a. m.	2	.24	.90	8:50 a. m.	10	.86	.18
5:50 p. m.	5	1.42	.24	4:45 a. m.	3	.27	.60	8:55 a. m.	5	.87	.12
5:55 p. m.	5	1.44	.24	4:50 a. m.	5	.34	.84	9:18 a. m.	23	.87	0
6:00 p. m.	5	1.45	.12	4:52 a. m.	2	.36	.60	9:20 a. m.	2	.88	.30
6:05 p. m.	5	1.47	.24	4:55 a. m.	3	.44	1.60	9:25 a. m.	5	.94	.72
6:10 p. m.	5	1.50	.36	5:00 a. m.	5	.53	1.08	9:28 a. m.	3	.99	1.00
6:20 p. m.	10	1.53	.18	5:10 a. m.	10	.57	.24	9:29 a. m.	1	1.05	3.60
6:30 p. m.	10	1.56	.18	5:20 a. m.	10	.59	.12	9:30 a. m.	1	1.06	.60
7:00 p. m.	30	1.58	.04	5:30 a. m.	10	.60	.06	9:33 a. m.	3	1.10	.80
7:30 p. m.	30	1.60	.04	5:45 a. m.	15	.60	0	9:50 a. m.	17	1.10	0
10:27 p. m.	177	1.60	0	6:00 a. m.	15	.61	.04	10:00 a. m.	10	1.11	.06
10:30 p. m.	3	1.64	.80	6:15 a. m.	15	.61	0	11:00 a. m.	60	1.12	.01
10:33 p. m.	3	1.72	1.60	6:20 a. m.	5	.62	.12	12:00 m.	60	1.13	.01
10:35 p. m.	2	1.74	.60	6:45 a. m.	25	.62	0	1:32 p. m.	92	1.13	0
10:40 p. m.	5	1.75	.12	6:48 a. m.	3	.63	.20	1:35 p. m.	3	1.16	.60
10:50 p. m.	10	1.78	.18	6:50 a. m.	2	.64	.30	1:40 p. m.	5	1.17	.12
11:00 p. m.	10	1.79	.06	6:55 a. m.	5	.65	.12	3:15 p. m.	95	1.17	0
12:00 m.	60	1.80	.01	7:15 a. m.	20	.65	0	3:20 p. m.	5	1.20	.36
Oct. 26:				7:30 a. m.	15	.66	.04	3:25 p. m.	5	1.21	.12
1:00 a. m.	60	1.82	.02	7:45 a. m.	15	.67	.04	5:00 p. m.	95	1.21	0
1:16 a. m.	16	1.82	0	7:50 a. m.	5	.68	.12	5:30 p. m.	30	1.23	.04
1:20 a. m.	4	1.85	.45	7:52 a. m.	2	.70	.60	6:00 p. m.	30	1.24	.02
8:25 a. m.	425	1.85	0	7:55 a. m.	3	.72	.40	7:00 p. m.	60	1.24	0
8:30 a. m.	5	2.02	2.04	8:00 a. m.	5	.74	.24	7:30 p. m.	30	1.25	.02
8:33 a. m. ^{3 4}	3	2.30	5.60	8:08 a. m.	8	.74	0	8:00 p. m. ³	30	1.26	.02
Oct. 27:											
3:57 a. m. ²		0	0								

² Rain began.³ Rain ended.⁴ No record after 8:33 a. m.TABLE 104.—Rainfall at station 54¹ for selected storms, 1939

Date and time	Time interval	Accumulated depth	Intensity	Date and time	Time interval	Accumulated depth	Intensity	Date and time	Time interval	Accumulated depth	Intensity
STORM OF FEB. 14-15				STORM OF FEB. 14-15—Continued				STORM OF JUNE 18-19—Continued			
Feb. 14:	Min.	In.	In. per hr.	Feb. 15—Con.	Min.	In.	In. per hr.	June 18—Con.	Min.	In.	In. per hr.
8:20 p. m.		0	0	6:00 a. m.	60	1.12	0.01	12:30 p. m.	10	1.53	0.18
8:30 p. m.	10	.02	.12	7:00 a. m.	60	1.13	.01	2:30 p. m.	120	1.53	0
8:45 p. m.	15	.03	.04	8:00 a. m.	60	1.14	.01	2:40 p. m.	10	1.54	.06
9:00 p. m.	15	.05	.08	8:10 a. m.	10	1.15	.06	4:40 p. m.	120	1.54	0
9:15 p. m.	15	.06	.04	8:30 a. m.	20	1.16	.03	4:50 p. m.	10	1.56	.12
9:30 p. m.	15	.07	.04	9:00 a. m.	30	1.17	.02	5:20 p. m.	30	1.56	0
9:45 p. m.	15	.08	.04	9:30 a. m.	30	1.18	.02	5:30 p. m.	10	1.58	.12
10:00 p. m.	15	.09	.04	12:20 p. m.	170	1.18	0	5:40 p. m.	10	1.58	0
10:15 p. m.	15	.10	.04	12:40 p. m.	20	1.20	.06	5:50 p. m.	10	1.59	.06
10:30 p. m.	15	.11	.04	1:00 p. m. ³	20	1.21	.03	6:00 p. m.	10	1.60	.06
10:45 p. m.	15	.13	.08	1:20 p. m.	20	1.22	.03	6:40 p. m.	40	1.60	0
11:00 p. m.	15	.15	.08					6:50 p. m.	10	1.66	.36
11:15 p. m.	15	.18	.12	STORM OF JUNE 18-19				7:00 p. m.	10	1.72	.36
11:30 p. m.	15	.20	.08	June 18:				7:10 p. m.	10	1.78	.36
11:45 p. m.	15	.23	.12	7:30 a. m. ²		0	0	7:20 p. m.	10	1.80	.12
12:00 m.	15	.26	.12	7:40 a. m.	10	.02	.12	7:30 p. m.	10	1.82	.12
Feb. 15:				7:50 a. m.	10	.04	.12	7:40 p. m.	10	1.86	.24
12:15 a. m.	15	.30	.16	8:00 a. m.	10	.08	.24	7:50 p. m.	10	1.87	.06
12:30 a. m.	15	.34	.16	8:15 a. m.	15	.12	.16	7:55 p. m.	5	1.88	.12
12:45 a. m.	15	.38	.16	8:30 a. m.	15	.15	.12	9:30 p. m.	95	1.88	0
12:50 a. m.	5	.39	.12	8:45 a. m.	15	.18	.12	9:45 p. m.	15	1.92	.16
1:00 a. m.	10	.43	.24	9:00 a. m.	15	.26	.32	10:00 p. m.	15	1.96	.16
1:10 a. m.	10	.47	.24	9:05 a. m.	5	.31	.60	15:15 p. m.	15	1.97	.04
1:20 a. m.	10	.51	.24	9:10 a. m.	5	.32	.12	10:30 p. m.	15	1.98	.04
1:30 a. m.	10	.56	.30	9:15 a. m.	5	.34	.24	10:45 p. m.	15	1.99	.04
1:40 a. m.	10	.61	.30	9:30 a. m.	15	.36	.08	11:00 p. m.	15	2.00	.04
1:50 a. m.	10	.65	.24	9:45 a. m.	15	.42	.24	11:15 p. m.	15	2.02	.08
2:00 a. m.	10	.70	.30	10:00 a. m.	15	.46	.16	11:30 p. m.	15	2.04	.08
2:10 a. m.	10	.73	.18	10:15 a. m.	15	.50	.16	11:45 p. m.	15	2.07	.12
2:20 a. m.	10	.77	.24	10:30 a. m.	15	.56	.24	12:00 p. m.	15	2.14	.28
2:30 a. m.	10	.81	.24	10:45 a. m.	15	.60	.16	June 19:			
2:40 a. m.	10	.85	.24	11:00 a. m.	15	.76	.64	12:15 a. m.	15	2.23	.36
2:50 a. m.	10	.89	.24	11:10 a. m.	10	1.02	1.56	12:30 a. m.	15	2.24	.04
3:00 a. m.	10	.93	.24	11:20 a. m.	10	1.15	.78	12:45 a. m.	15	2.28	.16
3:10 a. m.	10	.96	.18	11:30 a. m.	10	1.24	.54	1:00 a. m.	15	2.29	.04
3:20 a. m.	10	.98	.12	11:40 a. m.	10	1.33	.54	1:15 a. m.	15	2.30	.04
3:30 a. m.	10	1.01	.18	11:50 a. m.	10	1.38	.30	2:30 a. m.	75	2.30	0
3:40 a. m.	10	1.03	.12	12:00 m.	10	1.39	.06	2:45 a. m.	15	2.32	.08
3:50 a. m.	10	1.06	.18	12:10 p. m.	10	1.41	.12	3:00 a. m.	15	2.38	.24
4:00 a. m.	10	1.07	.06	12:20 p. m.	10	1.50	.54	3:15 a. m.	15	2.46	.32
4:20 a. m.	20	1.09	.06					3:30 a. m.	15	2.52	.24
4:40 a. m.	20	1.10	.03					3:45 a. m.	15	2.53	.04
5:00 a. m.	20	1.11	.03					4:00 a. m.	15	2.55	.08

¹ For location of rainfall station see fig. 1.² Rain began.³ Rain ended.

TABLE 104.—Rainfall at station 54 for selected storms, 1939—Continued

Date and time	Time interval	Accumulated depth	Intensity	Date and time	Time interval	Accumulated depth	Intensity	Date and time	Time interval	Accumulated depth	Intensity
STORM OF JUNE 18-19—Continued				STORM OF OCT. 25-27—Continued				STORM OF OCT. 25-27—Continued			
June 19—Con.	Min.	In.	In. per hr.	Oct. 25—Con.	Min.	In.	In. per hr.	Oct. 26:	Min.	In.	In. per hr.
4:15 a. m.	15	2.56	0.04	7:10 a. m.	5	0.28	0	12:30 a. m.	30	1.81	0
4:30 a. m.	15	2.58	.08	7:13 a. m.	3	.29	.20	1:00 a. m.	30	1.82	.02
5:30 a. m.	60	2.58	0	7:15 a. m.	2	.31	.60	1:24 a. m.	24	1.82	0
5:45 a. m.	15	2.59	.04	7:20 a. m.	5	.32	.12	1:25 a. m.	1	1.83	.60
6:00 a. m.	15	2.60	.04	7:30 a. m.	10	.33	.06	1:30 a. m.	5	1.84	.12
6:08 a. m.	8	2.60	0	7:40 a. m.	10	.34	.06	2:10 a. m.	40	1.84	0
6:10 a. m.	2	2.62	.60	7:50 a. m.	10	.35	.06	2:11 a. m.	1	1.86	1.20
7:20 a. m.	70	2.62	0	8:00 a. m.	10	.35	0	2:15 a. m.	4	1.87	.15
7:30 a. m.	10	2.64	.12	8:10 a. m.	10	.36	.06	7:20 a. m.	325	1.87	0
7:40 a. m.	10	2.66	.12	8:20 a. m.	10	.37	.06	7:30 a. m.	10	1.88	.06
7:50 a. m.	10	2.67	.06	9:00 a. m.	40	.37	0	7:40 a. m.	10	1.88	0
8:00 a. m.	10	2.68	.06	9:10 a. m.	10	.38	.06	7:42 a. m.	2	1.89	.30
8:10 a. m.	10	2.68	0	9:20 a. m.	10	.39	.06	8:34 a. m.	52	1.89	0
8:20 a. m.	10	2.69	.06	9:30 a. m.	10	.40	.06	8:35 a. m.	1	1.90	.60
8:30 a. m. ³	10	2.70	.06	9:40 a. m.	10	.41	.06	8:38 a. m.	3	2.01	2.20
				9:50 a. m.	10	.46	.30	8:40 a. m.	2	2.12	3.30
STORM OF JULY 8				10:00 a. m.	10	.48	.12	8:42 a. m.	2	2.29	5.10
July 8:				10:10 a. m.	10	.49	.06	8:45 a. m.	3	2.46	3.40
5:05 a. m. ²		0	0	10:20 a. m.	10	.50	.06	8:46 a. m.	1	2.48	1.20
5:10 a. m.	5	.26	3.12	10:30 a. m.	10	.51	.06	8:50 a. m.	4	2.50	.30
5:14 a. m.	4	.52	3.90	10:40 a. m.	10	.51	0	9:00 a. m. ³	10	2.52	.12
5:20 a. m.	6	.53	.10	10:50 a. m.	10	.52	.06				
7:31 a. m.	131	.53	0	11:00 a. m.	10	.52	0	Oct. 27:			
7:32 a. m.	1	.56	1.80	12:00 m.	60	.53	.01	3:57 a. m. ²		0	0
7:34 a. m.	2	.65	2.70	1:00 p. m.	60	.54	.01	4:00 a. m.	3	.02	.40
7:36 a. m.	2	.75	3.00	1:15 p. m.	15	.58	.16	4:15 a. m.	15	.09	.28
7:40 a. m.	4	.76	.15	1:30 p. m.	15	.59	.04	4:30 a. m.	15	.13	.16
7:42 a. m.	2	.77	.30	1:45 p. m.	15	.60	.04	4:35 a. m.	5	.16	.36
7:46 a. m.	4	.89	1.80	2:00 p. m.	15	.62	.08	4:40 a. m.	5	.22	.72
7:50 a. m.	4	.99	1.50	2:15 p. m.	15	.64	.08	4:42 a. m.	2	.25	.90
7:54 a. m.	4	1.09	1.50	2:20 p. m.	5	.66	.24	4:45 a. m.	3	.29	.80
7:58 a. m.	4	1.17	1.20	2:25 p. m.	5	.67	.12	4:47 a. m.	2	.33	1.20
8:00 a. m.	2	1.20	.90	2:29 p. m.	4	.69	.30	4:50 a. m.	3	.37	.80
8:04 a. m.	4	1.22	.30	2:30 p. m.	1	.71	1.20	4:51 a. m.	1	.39	1.20
8:10 a. m.	6	1.27	.50	2:45 p. m.	15	.79	.32	4:55 a. m.	4	.48	1.35
8:16 a. m.	6	1.31	.40	3:00 p. m.	15	.84	.20	5:00 a. m.	5	.57	1.08
12:25 p. m.	249	1.31	0	3:05 p. m.	5	.85	.12	5:01 a. m.	1	.59	1.20
12:27 p. m.	2	1.34	.90	3:10 p. m.	5	.86	.12	5:05 a. m.	4	.61	.30
12:28 p. m.	1	1.38	2.40	3:12 p. m.	2	.86	0	5:10 a. m.	5	.62	.12
12:30 p. m.	2	1.50	3.60	3:15 p. m.	3	.88	.40	5:20 a. m.	10	.64	.12
12:32 p. m.	2	1.58	2.40	3:20 p. m.	5	.89	.12	5:30 a. m.	10	.67	.18
12:42 p. m.	10	1.58	0	3:40 p. m.	20	.89	0	6:00 a. m.	30	.68	.02
12:44 p. m.	2	1.62	1.20	3:50 p. m.	10	.91	.12	6:30 a. m.	30	.69	.02
12:50 p. m.	6	1.65	.30	4:00 p. m.	10	.93	.12	6:47 a. m.	17	.69	0
12:55 p. m.	5	1.69	.48	4:10 p. m.	10	1.00	.42	6:50 a. m.	3	.71	.40
1:00 p. m.	5	1.78	1.08	4:20 p. m.	10	1.07	.42	6:55 a. m.	5	.72	.12
1:04 p. m.	4	1.84	.90	4:30 p. m.	10	1.15	.48	7:32 a. m.	37	.72	0
1:10 p. m.	6	1.86	.20	4:40 p. m.	10	1.18	.18	7:35 a. m.	3	.73	.20
1:40 p. m.	30	1.86	0	4:44 p. m.	4	1.20	.30	7:40 a. m.	5	.74	.12
1:50 p. m.	10	1.87	.06	4:45 p. m.	1	1.22	1.20	7:45 a. m.	5	.74	0
2:00 p. m.	10	1.89	.12	4:50 p. m.	5	1.23	.12	7:50 a. m.	5	.75	.12
2:10 p. m.	10	1.90	.06	4:55 p. m.	5	1.25	.24	7:55 a. m.	5	.78	.36
2:16 p. m. ³	6	1.91	.10	5:00 p. m.	5	1.28	.36	8:05 a. m.	10	.78	0
STORM OF OCT. 25-27				5:15 p. m.	15	1.32	.16	8:10 a. m.	5	.79	.12
Oct. 25.				5:30 p. m.	15	1.36	.16	8:20 a. m.	10	.84	.30
12:20 a. m. ²		0	0	5:45 p. m.	15	1.38	.08	8:30 a. m.	10	.86	.12
12:25 a. m.	5	.14	1.68	5:50 p. m.	5	1.39	.12	8:40 a. m.	10	.88	.12
12:26 a. m.	1	.15	.60	5:55 p. m.	5	1.42	.36	8:50 a. m.	10	.90	.12
12:30 a. m.	4	.16	.15	5:57 p. m.	2	1.46	1.20	9:15 a. m.	25	.90	0
4:00 a. m.	210	.16	0	6:00 p. m.	3	1.47	.20	9:17 a. m.	2	.91	.30
4:30 a. m.	30	.17	.02	6:05 p. m.	5	1.48	.12	9:20 a. m.	3	.95	.80
5:00 a. m.	30	.19	.04	6:10 p. m.	5	1.49	.12	9:25 a. m.	5	1.02	.34
5:10 a. m.	10	.20	.06	6:12 p. m.	2	1.49	0	9:30 a. m.	5	1.11	1.08
5:24 a. m.	14	.20	0	6:13 p. m.	1	1.51	1.20	10:00 a. m.	30	1.13	.04
5:25 a. m.	1	.21	.60	6:15 p. m.	2	1.53	.60	10:30 a. m.	30	1.15	.04
5:30 a. m.	5	.22	.12	6:20 p. m.	5	1.55	.24	11:00 a. m.	30	1.15	0
6:00 a. m.	30	.22	0	6:30 p. m.	10	1.57	.12	11:30 a. m.	30	1.16	.02
6:30 a. m.	30	.23	.02	6:40 p. m.	10	1.59	.12	1:10 p. m.	100	1.16	0
6:40 a. m.	10	.23	0	7:00 p. m.	20	1.59	0	1:20 p. m.	10	1.17	.06
6:50 a. m.	10	.25	.12	9:15 p. m.	15	1.61	.08	1:30 p. m.	10	1.18	.06
7:00 a. m.	10	.26	.06	9:30 p. m.	15	1.63	.08	1:33 p. m.	3	1.18	0
7:02 a. m.	2	.27	.30	9:45 p. m.	15	1.64	.04	1:34 p. m.	1	1.21	1.80
7:05 a. m.	3	.28	.20	10:34 p. m.	169	1.64	0	1:35 p. m.	1	1.22	.60
				10:35 p. m.	1	1.65	.60	1:37 p. m.	2	1.24	.60
				10:40 p. m.	5	1.75	1.20	3:15 p. m.	98	1.24	0
				10:45 p. m.	5	1.77	.24	3:18 p. m.	3	1.27	.60
				10:50 p. m.	5	1.78	.12	3:20 p. m.	2	1.27	0
				11:00 p. m.	10	1.79	.06	3:25 p. m.	5	1.28	.12
				11:10 p. m.	10	1.80	.06	3:30 p. m.	5	1.29	.12
				11:45 p. m.	35	1.80	0	5:00 p. m.	90	1.29	0
				12:00 p. m.	15	1.81	.04	5:30 p. m.	30	1.31	.04
								6:00 p. m. ³	30	1.32	.02

² Rain began.³ Rain ended.

TABLE 105.—*Rainfall at station 56¹ for selected storms, 1939*

STORM OF FEB. 14-15				STORM OF JUNE 18-19—Continued				STORM OF JULY 8—Continued			
Date and time	Time interval	Accumulated depth	Intensity	Date and time	Time interval	Accumulated depth	Intensity	Date and time	Time interval	Accumulated depth	Intensity
Feb. 14:				June 18—Con.				July 8—Con.			
8:20 p. m. ²	Min.	In.	In. per hr.	5:00 p. m.	Min.	In.	In. per hr.	8:04 a. m.	Min.	In.	In. per hr.
8:40 p. m.	20	0	0	5:20 p. m.	16	1.50	0.04	8:06 a. m.	4	0.89	0.30
9:00 p. m.	20	.03	.09	5:40 p. m.	20	1.50	0	8:08 a. m.	2	.94	1.50
9:20 p. m.	20	.05	.06	6:00 p. m.	20	1.51	.03	12:24 p. m.	2	.96	.60
9:40 p. m.	20	.06	.03	6:20 p. m.	20	1.52	.03	12:27 p. m.	256	.96	0
10:00 p. m.	20	.07	.03	6:30 p. m.	20	1.52	0	12:28 p. m.	3	.97	.20
10:20 p. m.	20	.08	.03	6:36 p. m.	10	1.53	.06	12:29 p. m.	1	1.01	2.40
10:40 p. m.	20	.10	.06	6:40 p. m.	6	1.53	0	12:41 p. m.	13	1.01	0
11:00 p. m.	20	.12	.06	6:42 p. m.	4	1.55	.30	12:44 p. m.	3	1.05	.80
11:20 p. m.	20	.15	.09	6:50 p. m.	2	1.58	.90	12:48 p. m.	4	1.10	.75
11:40 p. m.	20	.18	.09	6:53 p. m.	8	1.61	.23	12:50 p. m.	2	1.11	.30
12:00 p. m.	20	.21	.09	6:54 p. m.	3	1.63	.40	12:54 p. m.	4	1.16	.75
Feb. 15:	20	.25	.12	7:00 p. m.	1	1.66	1.80	12:56 p. m.	2	1.21	1.50
12:20 a. m.	20	0	0	7:10 p. m.	6	1.72	0	12:58 p. m.	2	1.27	1.80
12:40 a. m.	20	.29	.12	7:20 p. m.	10	1.74	.12	1:00 p. m.	2	1.31	1.20
1:00 a. m.	20	.34	.15	7:24 p. m.	10	1.80	.36	1:04 p. m.	2	1.36	.75
1:10 a. m.	20	.41	.21	7:28 p. m.	4	1.82	.30	1:10 p. m.	4	1.38	.20
1:20 a. m.	10	.44	.18	7:30 p. m.	4	1.83	.15	1:44 p. m.	6	1.38	0
1:30 a. m.	10	.50	.36	7:33 p. m.	2	1.85	.60	1:50 p. m.	34	1.38	.20
1:40 a. m.	10	.55	.30	7:40 p. m.	3	1.88	.60	2:00 p. m.	6	1.40	.12
1:50 a. m.	10	.60	.30	8:50 p. m.	7	1.89	.09	2:10 p. m. ⁵	10	1.42	.06
2:00 a. m.	10	.65	.30	9:26 p. m.	10	1.90	.06				
2:10 a. m.	10	.68	.18	9:30 p. m.	96	1.90	0				
2:20 a. m.	10	.72	.24	9:40 p. m.	10	1.92	.30				
2:30 a. m. ³	10	.75	.18	9:50 p. m.	4	1.96	.24				
2:40 a. m.	10	.79	.24	10:00 p. m.	10	1.98	.12				
2:50 a. m.	10	.83	.24	10:10 p. m.	10	1.98	.12				
3:00 a. m.	10	.87	.24	10:40 p. m.	10	2.02	.24				
3:10 a. m.	10	.87	.24	10:50 p. m.	10	2.04	.12				
3:20 a. m.	10	.91	.24	11:00 p. m.	30	2.04	0				
3:30 a. m.	10	.93	.12	11:20 p. m.	10	2.05	.06				
3:40 a. m.	10	.95	.12	11:30 p. m.	10	2.06	.06				
3:50 a. m.	10	.97	.12	11:40 p. m.	20	2.06	T.				
4:00 a. m.	10	.98	.06	11:50 p. m.	10	2.08	.12				
4:30 a. m.	10	.99	.06	12:00 p. m.	10	2.08	T.				
5:00 a. m.	10	1.00	.06	June 19:	10	2.13	.30				
7:30 a. m.	30	1.01	.02	12:10 a. m.	10	2.15	.12				
8:00 a. m.	30	1.02	.02	12:20 a. m.	10	2.17	.12				
9:00 a. m.	60	1.03	.02	12:30 a. m.	10	2.19	.12				
10:00 a. m.	60	1.04	.02	12:40 a. m.	10	2.21	.12				
12:20 p. m.	140	1.05	.01	12:50 a. m.	10	2.22	.06				
12:30 p. m.	10	1.05	0	12:55 a. m.	10	2.23	.06				
12:40 p. m.	10	1.07	.12	1:00 a. m.	10	2.24	.06				
12:50 p. m.	10	1.10	.18	2:26 a. m.	86	2.24	0				
1:00 p. m.	10	1.12	.12	2:30 a. m.	4	2.25	.15				
1:20 p. m.	20	1.14	.12	2:40 a. m.	10	2.25	.18				
1:40 p. m.	20	1.15	.03	2:50 a. m.	10	2.28	.12				
2:00 p. m. ⁴	20	1.16	.03	3:00 a. m.	10	2.30	.12				
STORM OF JUNE 18-19				3:10 a. m.	10	2.34	.24				
June 18:				3:20 a. m.	10	2.38	.24				
7:43 a. m. ²	0	0	0	3:30 a. m.	10	2.42	.24				
7:50 a. m.	7	.04	.34	3:40 a. m.	10	2.46	.24				
8:00 a. m.	10	.08	.24	3:50 a. m.	10	2.48	.12				
8:10 a. m.	10	.09	.06	4:00 a. m.	10	2.49	.06				
8:20 a. m.	10	.11	.12	4:10 a. m.	10	2.50	.06				
8:30 a. m.	10	.13	.12	4:20 a. m.	10	2.51	.06				
8:40 a. m.	10	.16	.18	4:30 a. m.	10	2.52	.06				
8:50 a. m.	10	.21	.30	5:00 a. m.	40	2.52	0				
9:00 a. m.	10	.24	.18	5:30 a. m.	30	2.53	.02				
9:03 a. m.	3	.27	.60	6:00 a. m.	30	2.54	.02				
9:10 a. m.	7	.28	.09	6:20 a. m.	20	2.55	.03				
9:20 a. m.	10	.30	.12	6:40 a. m.	20	2.57	.06				
9:30 a. m.	10	.32	.12	7:00 a. m.	20	2.58	.03				
9:40 a. m.	10	.36	.24	7:20 a. m.	20	2.59	.03				
9:50 a. m.	10	.39	.18	7:40 a. m.	20	2.61	.06				
10:00 a. m.	10	.41	.12	8:00 a. m.	20	2.63	.06				
10:10 a. m.	10	.43	.12	8:20 a. m.	20	2.65	.06				
10:20 a. m.	10	.47	.24	8:40 a. m.	20	2.67	.06				
10:30 a. m.	10	.52	.30	8:50 a. m. ⁵	10	2.68	.06				
10:36 a. m.	6	.56	.40	STORM OF JULY 8							
10:40 a. m.	4	.57	.15	July 8:							
10:50 a. m.	10	.62	.30	5:04 a. m. ²	0	0	0				
10:56 a. m.	6	.73	1.10	5:06 a. m.	2	.06	1.80				
11:00 a. m.	4	.83	1.50	5:08 a. m.	2	.13	2.10				
11:07 a. m.	7	1.03	1.71	5:10 a. m.	2	.16	.90				
11:10 a. m.	3	1.09	1.20	5:12 a. m.	2	.17	.30				
11:20 a. m.	10	1.19	.60	7:30 a. m.	138	.17	0				
11:30 a. m.	10	1.25	.36	7:32 a. m.	2	.26	2.70				
11:40 a. m.	10	1.29	.24	7:33 a. m.	1	.36	6.00				
11:50 a. m.	10	1.33	.24	7:34 a. m.	1	.40	2.40				
12:00 m.	10	1.34	.06	7:38 a. m.	4	.41	1.15				
12:10 p. m.	10	1.37	.18	7:40 a. m.	2	.48	2.10				
12:20 p. m.	10	1.45	.48	7:42 a. m.	2	.57	2.70				
12:30 p. m.	10	1.46	.06	7:44 a. m.	2	.65	2.40				
12:40 p. m.	10	1.47	.06	7:49 a. m.	5	.66	.12				
1:30 p. m.	50	1.47	0	7:50 a. m.	1	.70	2.40				
1:40 p. m.	10	1.48	.06	7:52 a. m.	2	.75	1.50				
1:50 p. m.	10	1.49	.06	7:54 a. m.	2	.81	1.80				
4:44 p. m.	174	1.49	0	7:56 a. m.	2	.83	.60				
				8:00 a. m.	4	.87	.60				

¹ For location of rainfall station see fig. 1.

² Rain began.

³ Rain changed to snow.

⁴ End of snow.

^d Rain ended.

TABLE 105.—Rainfall at station 56 for selected storms, 1939—Continued

Date and time	Time interval	Accumulated depth	Intensity	Date and time	Time interval	Accumulated depth	Intensity	Date and time	Time interval	Accumulated depth	Intensity
STORM OF OCT. 25-27—Continued				STORM OF OCT. 25-27—Continued				STORM OF OCT. 25-27—Continued			
Oct. 25—Con.	Min.	In.	In. per hr.	Oct. 26—Con.	Min.	In.	In. per hr.	Oct. 27—Con.	Min.	In.	In. per hr.
6:15 p. m.	3	1.58	0.80	9:00 a. m. ⁵	10	2.44	0.12	8:00 a. m.	15	0.84	0.24
6:20 p. m.	5	1.59	.12	Oct. 27:				8:13 a. m.	13	.84	0
6:33 p. m.	13	1.63	.18	3:56 a. m. ²		0	0	8:20 a. m.	7	.88	.30
6:40 p. m.	7	1.64	.08	4:00 a. m.	4	.02	.30	8:24 a. m.	4	.89	.15
7:00 p. m.	20	1.65	.03	4:10 a. m.	10	.07	.30	8:40 a. m.	16	.91	.08
7:20 p. m.	20	1.67	.06	4:20 a. m.	10	.12	.30	8:50 a. m.	10	.92	.06
9:30 p. m.	130	1.67	0	4:24 a. m.	4	.13	.15	8:51 a. m.	1	.94	1.20
9:40 p. m.	10	1.69	.12	4:30 a. m.	6	.15	.20	9:18 a. m.	27	.94	0
10:33 p. m.	53	1.69	0	4:37 a. m.	7	.18	.26	9:20 a. m.	2	.97	.90
10:38 p. m.	5	1.74	.60	4:40 a. m.	3	.23	1.00	9:24 a. m.	4	1.00	.45
10:40 p. m.	2	1.75	.30	4:43 a. m.	3	.29	1.20	9:25 a. m.	1	1.03	1.80
10:47 p. m.	7	1.75	0	4:47 a. m.	4	.34	.75	9:29 a. m.	4	1.09	.90
10:54 p. m.	7	1.77	.17	4:50 a. m.	3	.41	1.40	9:30 a. m.	1	1.12	1.80
11:20 p. m.	26	1.77	0	4:53 a. m.	3	.43	.40	9:33 a. m.	3	1.15	.60
11:40 p. m.	20	1.78	.03	4:58 a. m.	5	.55	1.44	9:40 a. m.	7	1.15	0
11:47 p. m.	7	1.79	.08	5:00 a. m.	2	.59	1.20	10:00 a. m.	20	1.17	.06
Oct. 26:				5:02 a. m.	2	.63	1.20	10:20 a. m.	20	1.17	0
1:20 a. m.	93	1.79	0	5:10 a. m.	8	.65	.15	10:23 a. m.	3	1.19	.40
1:23 a. m.	3	1.80	.20	5:18 a. m.	8	.67	.15	12:30 p. m.	127	1.19	0
1:24 a. m.	1	1.81	.60	5:20 a. m.	2	.67	0	1:00 p. m.	30	1.20	.02
1:40 a. m.	16	1.81	0	5:30 a. m.	10	.69	.12	1:35 p. m.	35	1.21	.02
2:00 a. m.	20	1.83	.06	5:40 a. m.	10	.69	0	1:36 p. m.	1	1.27	3.60
2:06 a. m.	6	1.83	0	6:00 a. m.	20	.70	.03	1:39 p. m.	3	1.29	.40
2:09 a. m.	3	1.87	.80	6:20 a. m.	20	.70	0	2:00 p. m.	21	1.30	.03
8:37 a. m.	388	1.87	0	6:40 a. m.	20	.71	.03	3:18 p. m.	78	1.30	0
8:39 a. m.	2	1.94	2.10	6:47 a. m.	7	.71	0	3:20 p. m.	2	1.32	.60
8:40 a. m.	1	2.07	7.80	6:54 a. m.	7	.74	.25	3:21 p. m.	1	1.33	.60
8:41 a. m.	1	2.12	3.00	7:00 a. m.	6	.75	.10	3:30 p. m.	9	1.34	.07
8:42 a. m.	1	2.28	9.60	7:32 a. m.	32	.75	0	3:33 p. m.	3	1.35	.20
8:43 a. m.	1	2.37	5.40	7:34 a. m.	2	.77	.60	5:00 p. m.	87	1.35	0
8:49 a. m.	6	2.42	.50	7:40 a. m.	6	.78	.10	6:00 p. m. ³	60	1.37	.02
8:50 a. m.	1	2.42	0	7:45 a. m.	5	.78	0				

² Rain began.³ Rain changed to snow.⁵ Rain ended.TABLE 106.—Rainfall at central meteorological station ¹ for selected storms, 1939

Date and time	Time interval	Accumulated depth	Intensity	Date and time	Time interval	Accumulated depth	Intensity	Date and time	Time interval	Accumulated depth	Intensity
STORM OF FEB. 14-15				STORM OF FEB. 14-15—Continued				STORM OF JUNE 18-19—Continued			
Feb. 14:	Min.	In.	In. per hr.	Feb. 15—Con.	Min.	In.	In. per hr.	June 18—Con.	Min.	In.	In. per hr.
8:20 p. m. ²		0	0	8:30 a. m.	30	1.23	0.02	1:30 p. m.	7	1.48	0.08
8:40 p. m.	20	.02	.06	9:00 a. m.	30	1.24	.02	2:33 p. m.	63	1.48	0
9:00 p. m.	20	.04	.06	9:30 a. m.	30	1.26	.04	2:35 p. m.	2	1.49	.30
9:10 p. m.	10	.05	.06	10:00 a. m.	30	1.27	.02	4:40 p. m.	125	1.49	0
9:30 p. m.	20	.05	0	10:15 a. m. ⁴	15	1.28	.04	4:50 p. m.	10	1.51	.12
9:40 p. m.	10	.06	.06	STORM OF JUNE 18-19				5:00 p. m.	10	1.52	.06
10:00 p. m.	20	.07	.03	June 18:				5:20 p. m.	20	1.52	0
10:20 p. m.	20	.10	.09	7:30 a. m. ²		0	0	5:30 p. m.	10	1.53	.06
10:40 p. m.	20	.13	.09	7:40 a. m.	10	.03	.18	5:40 p. m.	10	1.53	0
11:00 p. m.	20	.16	.09	7:50 a. m.	10	.05	.12	5:50 p. m.	10	1.55	.12
11:20 p. m.	20	.19	.09	8:00 a. m.	10	.08	.18	6:37 p. m.	47	1.55	0
11:40 p. m.	20	.22	.09	8:10 a. m.	10	.10	.12	6:40 p. m.	3	1.58	.60
12:00 p. m.	20	.26	.12	8:20 a. m.	10	.12	.12	6:50 p. m.	10	1.67	.54
Feb. 15:				8:30 a. m.	10	.14	.12	6:53 p. m.	3	1.69	.40
12:20 a. m.	20	.32	.18	8:37 a. m.	7	.14	0	7:00 p. m.	7	1.73	.34
12:30 a. m.	10	.34	.12	8:40 a. m.	3	.16	.40	7:10 p. m.	10	1.77	.24
12:36 a. m.	6	.36	.20	8:46 a. m.	6	.18	.20	7:20 p. m.	10	1.79	.12
12:40 a. m.	4	.38	.30	8:50 a. m.	4	.25	1.05	7:30 p. m.	10	1.80	.06
12:50 a. m.	10	.43	.30	8:51 a. m.	1	.26	.60	7:40 p. m.	10	1.81	.06
1:00 a. m.	10	.47	.24	9:00 a. m.	9	.29	.20	7:50 p. m.	10	1.82	.06
1:10 a. m.	10	.52	.30	9:02 a. m.	2	.33	1.20	8:00 p. m.	10	1.83	.06
1:20 a. m.	10	.59	.42	9:10 a. m.	8	.35	.15	9:32 p. m.	92	1.83	0
1:30 a. m.	10	.64	.30	9:20 a. m.	10	.36	.06	9:40 p. m.	8	1.88	.38
1:40 a. m.	10	.69	.30	9:30 a. m.	10	.39	.18	9:50 p. m.	10	1.91	.18
1:50 a. m.	10	.74	.30	9:40 a. m.	10	.44	.30	10:00 p. m.	10	1.93	.12
2:00 a. m.	10	.79	.30	9:50 a. m.	10	.47	.18	10:10 p. m.	10	1.95	.12
2:06 a. m.	6	.81	.20	10:00 a. m.	10	.50	.18	10:20 p. m.	10	1.96	.06
2:10 a. m.	4	.84	.45	10:10 a. m.	10	.52	.12	10:40 p. m.	20	1.96	0
2:20 a. m.	10	.91	.42	10:20 a. m.	10	.55	.18	10:50 p. m.	10	1.98	.12
2:30 a. m. ³	10	.97	.36	10:30 a. m.	10	.60	.30	11:00 p. m.	10	1.99	.06
2:40 a. m.	10	1.02	.30	10:40 a. m.	10	.63	.18	11:10 p. m.	10	2.00	.06
2:50 a. m.	10	1.05	.18	10:50 a. m.	10	.66	.18	11:20 p. m.	10	2.01	.06
3:00 a. m.	10	1.08	.18	11:00 a. m.	10	.72	.36	11:30 p. m.	10	2.03	.12
3:10 a. m.	10	1.10	.12	11:10 a. m.	10	.87	.90	11:40 p. m.	10	2.05	.12
3:20 a. m.	10	1.13	.18	11:20 a. m.	10	.99	.72	11:46 p. m.	6	2.06	.10
3:30 a. m.	10	1.15	.12	11:30 a. m.	10	1.11	.72	11:50 p. m.	4	2.09	.45
3:40 a. m.	10	1.16	.06	11:33 a. m.	3	1.15	.80	12:00 m.	10	2.14	.30
3:50 a. m.	10	1.17	.06	1:17 p. m.	104	1.15	0	June 19:			
4:00 a. m.	10	1.18	.06	1:20 p. m.	3	1.23	1.60	12:06 a. m.	6	2.16	.20
4:20 a. m.	20	1.19	.03	1:22 p. m.	2	1.31	2.40	12:10 a. m.	4	2.20	.60
4:40 a. m.	20	1.20	.03	1:23 p. m.	1	1.47	9.60	12:20 a. m.	10	2.34	.84
6:30 a. m.	110	1.20	0					12:30 a. m.	10	2.47	.78
7:00 a. m.	30	1.21	.02					12:40 a. m.	10	2.54	.42
7:30 a. m.	30	1.22	.02					12:50 a. m.	10	2.57	.18
8:00 a. m.	30	1.22	0					1:00 a. m.	10	2.58	.06

¹ For location of rainfall station, see fig. 2.² Rain began.³ Rain changed to snow.⁴ Snow ended.

TABLE 106.—Rainfall at central meteorological station for selected storms, 1939—Continued

Date and time	Time interval	Accumulated depth	Intensity	Date and time	Time interval	Accumulated depth	Intensity	Date and time	Time interval	Accumulated depth	Intensity
STORM OF JUNE 18-19—Continued				STORM OF OCT. 25-27				STORM OF OCT. 25-27—Continued			
June 19—Con.	Min.	In.	In. per hr.	Oct. 25—Con.	Min.	In.	In. per hr.	Oct. 26—Con.	Min.	In.	In. per hr.
1:10 a. m.	10	2.59	0.06	4:00 a. m.	214	0.11	0	2:13 a. m.	4	1.95	0.30
1:20 a. m.	10	2.60	.06	4:55 a. m.	55	.13	.02	2:20 a. m.	7	1.96	.08
2:40 a. m.	80	2.60	0	5:00 a. m.	5	.14	.12	8:36 a. m.	376	1.96	0
2:50 a. m.	10	2.63	.18	5:07 a. m.	7	.15	.09	8:40 a. m.	4	1.97	.15
3:00 a. m.	10	2.66	.18	5:25 a. m.	18	.15	0	8:41 a. m.	1	1.98	.60
3:10 a. m.	10	2.70	.24	5:29 a. m.	4	.16	.15	8:47 a. m.	6	2.12	1.40
3:20 a. m.	10	2.74	.24	6:00 a. m.	31	.16	0	8:50 a. m.	3	2.16	.80
3:30 a. m.	10	2.79	.30	6:30 a. m.	30	.17	.02	9:00 a. m.	10	2.29	.78
3:40 a. m.	10	2.81	.12	7:00 a. m.	30	.18	.02	9:03 a. m.	3	2.33	.80
4:20 a. m.	40	2.81	0	7:08 a. m.	8	.22	.32	9:10 a. m.	7	2.38	.42
4:26 a. m.	6	2.82	.10	7:18 a. m.	10	.26	.24	9:20 a. m.	10	2.45	.42
4:30 a. m.	4	2.83	.15	7:23 a. m.	5	.29	.36	9:26 a. m.	6	2.48	.30
4:32 a. m.	2	2.84	.30	8:00 a. m.	37	.31	.04	9:30 a. m.	4	2.50	.30
4:50 a. m.	18	2.84	0	8:31 a. m.	31	.33	.04	9:40 a. m.	10	2.55	.30
5:00 a. m.	10	2.85	.06	9:00 a. m.	29	.33	0	9:50 a. m.	10	2.61	.36
5:30 a. m.	30	2.86	.02	9:10 a. m.	10	.34	.06	9:55 a. m. ³	5	2.64	.36
6:00 a. m.	30	2.87	.02	9:42 a. m.	32	.36	.04	Oct. 27:			
6:10 a. m.	10	2.87	0	9:46 a. m.	4	.38	.30	4:03 a. m. ²		0	0
6:20 a. m.	10	2.88	.06	10:00 a. m.	14	.41	.12	4:09 a. m.	6	.08	.80
6:30 a. m.	10	2.90	.12	10:22 a. m.	22	.45	.12	4:13 a. m.	4	.10	.30
7:08 a. m.	38	2.90	0	11:00 a. m.	38	.45	0	4:20 a. m.	7	.13	.26
7:10 a. m.	2	2.92	.60	12:00 m.	60	.47	.02	4:25 a. m.	5	.15	.24
7:12 a. m.	2	2.93	.30	12:57 p. m.	57	.47	0	4:38 a. m.	13	.19	.18
7:20 a. m.	8	2.93	0	1:00 p. m.	3	.48	.20	4:40 a. m.	2	.20	.30
7:25 a. m.	5	2.94	.12	1:12 p. m.	12	.51	.15	4:42 a. m.	2	.21	.30
7:30 a. m.	5	2.95	.12	2:00 p. m.	48	.55	.05	4:48 a. m.	6	.29	.80
7:40 a. m.	10	2.98	.18	2:02 p. m.	2	.55	0	4:49 a. m.	1	.32	1.80
7:50 a. m.	10	3.01	.18	2:20 p. m.	18	.60	.15	4:55 a. m.	6	.41	.90
8:00 a. m.	10	3.03	.12	2:30 p. m.	10	.65	.30	5:00 a. m.	5	.50	1.08
8:10 a. m.	10	3.05	.12	2:40 p. m.	10	.75	.60	5:02 a. m.	2	.53	.90
8:20 a. m.	10	3.06	.06	2:46 p. m.	6	.79	.40	5:05 a. m.	3	.63	2.00
8:30 a. m. ⁴	10	3.07	.06	3:00 p. m.	14	.83	.16	5:10 a. m.	5	.69	.72
STORM OF JULY 8				3:18 p. m.	18	.88	.15	5:20 a. m.	10	.72	.18
July 8:				3:20 p. m.	2	.88	0	5:29 a. m.	9	.75	.20
5:13 a. m. ²		0	0	3:28 p. m.	8	.89	.08	5:40 a. m.	11	.76	.05
5:15 a. m.	2	.08	2.40	3:40 p. m.	12	.90	.05	6:00 a. m.	20	.77	.03
5:20 a. m.	5	.40	3.84	3:44 p. m.	4	.90	0	6:20 a. m.	20	.77	0
5:22 a. m.	2	.50	3.00	3:58 p. m.	14	.92	.08	6:40 a. m.	20	.78	.03
5:26 a. m.	4	.55	.75	4:00 p. m.	2	.94	.60	6:52 a. m.	12	.78	0
5:30 a. m.	6	.56	.10	4:06 p. m.	6	.95	.10	7:00 a. m.	8	.81	.22
7:42 a. m.	132	.56	0	4:10 p. m.	4	1.02	1.05	7:22 a. m.	22	.81	0
7:44 a. m.	2	.67	3.30	4:20 p. m.	10	1.08	.30	7:39 a. m.	17	.82	.04
7:46 a. m.	2	.73	1.50	4:27 p. m.	7	1.13	.43	7:40 a. m.	1	.83	.60
7:50 a. m.	4	.80	1.05	4:32 p. m.	5	1.17	.48	7:50 a. m.	10	.84	.06
7:54 a. m.	4	.80	0	4:40 p. m.	8	1.20	.23	7:54 a. m.	4	.87	.45
7:56 a. m.	2	.86	1.80	4:43 p. m.	3	1.21	.20	8:00 a. m.	6	.89	.20
8:00 a. m.	4	.94	1.20	4:48 p. m.	5	1.26	.60	8:04 a. m.	4	.90	.15
8:01 a. m.	1	1.10	9.60	5:00 p. m.	12	1.30	.20	8:16 a. m.	12	.90	0
8:08 a. m.	7	1.22	1.02	5:20 p. m.	20	1.36	.18	8:20 a. m.	4	.91	.15
8:09 a. m.	1	1.50	16.80	5:39 p. m.	19	1.39	.09	8:28 a. m.	8	.96	.38
8:10 a. m.	1	1.50	0	5:40 p. m.	1	1.40	.60	8:38 a. m.	10	.96	0
8:14 a. m.	4	1.52	.30	5:54 p. m.	14	1.44	.16	8:40 a. m.	2	.97	.30
8:15 a. m.	1	1.56	2.40	6:00 p. m.	6	1.52	.80	8:44 a. m.	4	1.00	.45
8:18 a. m.	3	1.61	1.00	6:14 p. m.	14	1.55	.12	9:00 a. m.	16	1.03	.11
8:20 a. m.	2	1.63	.60	6:17 p. m.	3	1.57	.40	9:20 a. m.	20	1.03	0
8:30 a. m.	10	1.64	.06	6:20 p. m.	3	1.58	.20	9:24 a. m.	4	1.04	.15
12:34 p. m.	244	1.64	0	6:23 p. m.	3	1.59	.20	9:30 a. m.	6	1.07	.30
12:39 p. m.	5	1.96	3.84	6:32 p. m.	9	1.64	.33	9:35 a. m.	5	1.19	1.44
12:40 p. m.	1	1.97	.60	6:40 p. m.	8	1.65	.08	9:39 a. m.	4	1.23	.60
12:52 p. m.	12	1.97	0	6:50 p. m.	10	1.67	.12	9:40 a. m.	1	1.23	0
12:54 p. m.	2	2.10	3.90	7:00 p. m.	10	1.68	.06	10:00 a. m.	20	1.24	.03
12:56 p. m.	2	2.20	3.00	7:20 p. m.	20	1.69	.03	10:05 a. m.	5	1.25	.12
1:00 p. m.	4	2.29	1.35	9:30 p. m.	130	1.69	0	11:00 a. m.	55	1.26	.01
1:03 p. m.	3	2.31	.40	9:40 p. m.	10	1.70	.06	12 m.	60	1.27	.01
1:10 p. m.	7	2.40	.76	10:00 p. m.	20	1.71	.03	1:00 p. m.	60	1.27	0
1:20 p. m.	10	2.44	.24	10:20 p. m.	20	1.71	0	1:39 p. m.	39	1.29	.03
1:30 p. m.	10	2.45	.06	10:36 p. m.	16	1.72	.04	1:42 p. m.	3	1.37	1.60
1:40 p. m.	10	2.45	0	10:40 p. m.	4	1.81	1.35	2:00 p. m.	18	1.38	.03
1:50 p. m.	10	2.46	.06	10:42 p. m.	2	1.85	1.20	3:24 p. m.	84	1.38	0
2:00 p. m.	10	2.46	0	10:57 p. m.	15	1.89	.16	3:28 p. m.	4	1.40	.30
2:10 p. m. ⁵	10	2.48	.12	11:00 p. m.	3	1.90	.20	3:40 p. m.	12	1.41	.05
Oct. 25:				11:40 p. m.	40	1.90	0	4:00 p. m.	20	1.41	0
12:19 a. m. ²		0	0	12:00 p. m.	20	1.91	.03	5:00 p. m.	60	1.42	.01
12:20 a. m.	1	.04	2.40	Oct. 26:				5:12 p. m.	12	1.43	.05
12:21 a. m.	1	.08	2.40	1:26 a. m.	86	1.91	0	6:00 p. m.	48	1.43	0
12:26 a. m.	5	.11	.36	1:33 a. m.	7	1.92	.08	7:00 p. m.	60	1.44	.01
				1:40 a. m.	7	1.92	0	11:00 p. m.	240	1.44	0
				2:00 a. m.	20	1.93	.03	12:00 m.	60	1.45	.01
				2:09 a. m.	9	1.93	0				

³ Rain began.⁵ Rain ended.

TABLE 107.—Rainfall at station 100¹ for selected storms, 1939

Date and time	Time interval	Accumulated depth	Intensity	Date and time	Time interval	Accumulated depth	Intensity	Date and time	Time interval	Accumulated depth	Intensity
STORM OF FEB. 14-15				STORM OF JUNE 18-19—Continued				STORM OF JULY 8—Continued			
Feb. 14:	Min.	In.	In. per hr.	June 18—Con.	Min.	In.	In. per hr.	July 8—Con.	Min.	In.	In. per hr.
8:30 p. m. ²	10	0	0	9:30 p. m.	90	1.56	0	2:20 p. m.	5	2.46	0.24
8:40 p. m.	20	.02	.12	9:45 p. m.	15	1.59	.12	2:25 p. m.	5	2.48	.24
9:00 p. m.	20	.04	.06	10:00 p. m.	15	1.61	.08	2:30 p. m.	5	2.50	.24
9:20 p. m.	20	.05	.03	10:15 p. m.	15	1.63	.08	2:40 p. m.	10	2.51	.06
9:40 p. m.	20	.06	.03	10:30 p. m.	15	1.64	.04	2:50 p. m. ³	10	2.52	.06
10:00 p. m.	20	.08	.06	10:40 p. m.	10	1.65	.06				
10:20 p. m.	20	.10	.06	11:10 p. m.	30	1.65	0				
10:40 p. m.	20	.12	.06	11:20 p. m.	10	1.67	.12				
11:00 p. m.	20	.15	.09	11:30 p. m.	10	1.69	.12				
11:20 p. m.	20	.19	.12	11:45 p. m.	15	1.71	.08				
11:40 p. m.	20	.23	.12	12:00 p. m.	15	1.75	.16				
12:00 m.	20	.28	.15								
Feb. 15:				June 19:				Oct. 25:			
12:20 a. m.	20	.32	.12	12:15 a. m.	15	1.82	.28	12:21 a. m. ²	3	0	0
12:30 a. m.	10	.35	.18	12:30 a. m.	15	1.90	.32	12:24 a. m.	1	.09	1.80
12:40 a. m.	10	.38	.18	12:45 a. m.	15	1.96	.24	12:25 a. m.	1	.11	1.20
12:45 a. m.	5	.40	.24	1:00 a. m.	15	2.02	.24	12:26 a. m.	1	.14	1.80
12:50 a. m.	5	.42	.24	1:15 a. m.	15	2.06	.16	12:30 a. m.	4	.15	.15
1:00 a. m.	10	.47	.30	1:30 a. m.	15	2.08	.08	4:30 a. m.	240	.15	0
1:10 a. m.	10	.52	.30	1:45 a. m.	15	2.10	.08	4:45 a. m.	15	.16	.04
1:20 a. m.	10	.58	.36	2:00 a. m.	15	2.12	.08	5:00 a. m.	15	.18	.08
1:30 a. m.	10	.66	.48	2:15 a. m.	15	2.14	.08	5:15 a. m.	15	.19	.04
1:40 a. m.	10	.72	.36	2:30 a. m.	15	2.15	.04	5:30 a. m.	15	.20	.04
1:50 a. m.	10	.77	.30	2:45 a. m.	15	2.16	.04	6:20 a. m.	50	.20	0
2:00 a. m.	10	.83	.36	3:00 a. m.	15	2.20	.16	6:30 a. m.	10	.21	.06
2:10 a. m.	10	.87	.24	3:15 a. m.	15	2.26	.24	6:40 a. m.	10	.23	.12
2:20 a. m.	10	.92	.30	3:30 a. m.	15	2.31	.20	6:50 a. m.	10	.24	.06
2:30 a. m.	10	.98	.36	3:45 a. m.	15	2.34	.12	7:00 a. m.	10	.25	.06
2:40 a. m.	10	1.03	.30	4:00 a. m.	15	2.35	.04	7:15 a. m.	15	.27	.08
2:50 a. m.	10	1.08	.30	4:15 a. m.	15	2.38	.12	7:30 a. m.	15	.31	.16
3:00 a. m.	10	1.12	.24	4:30 a. m.	15	2.40	.08	7:45 a. m.	15	.32	.04
3:20 a. m.	20	1.17	.15	6:30 a. m.	120	2.40	0	8:00 a. m.	15	.32	0
3:40 a. m.	20	1.24	.21	6:45 a. m.	15	2.43	.12	8:30 a. m.	30	.34	.04
4:00 a. m.	20	1.29	.15	7:20 a. m.	35	2.43	0	9:00 a. m.	30	.35	.02
4:20 a. m.	20	1.32	.09	7:30 a. m.	10	2.47	.24	9:30 a. m.	30	.37	.04
4:40 a. m.	20	1.34	.06	7:45 a. m.	15	2.52	.20	9:45 a. m.	15	.41	.16
5:00 a. m.	20	1.36	.06	8:00 a. m.	15	2.54	.08	10:00 a. m.	15	.44	.12
5:20 a. m.	20	1.37	.03	8:15 a. m.	15	2.55	.04	10:15 a. m.	15	.46	.08
5:40 a. m.	20	1.38	.03	8:30 a. m.	15	2.57	.08	10:30 a. m.	15	.47	.04
6:00 a. m.	20	1.39	.03	12:30 p. m.	240	2.57	0	11:00 a. m.	30	.48	.02
6:20 a. m.	20	1.39	0	12:40 p. m. ²	10	2.60	.18	12:00 m.	60	.48	0
6:40 a. m.	20	1.39	0					12:30 p. m.	30	.49	.02
7:00 a. m.	20	1.40	.03	STORM OF JULY 8				1:00 p. m.	30	.50	.02
7:20 a. m.	20	1.41	.03	July 8:				1:15 p. m.	15	.52	.08
7:40 a. m.	20	1.42	.03	5:05 a. m. ²	2	0	0	1:30 p. m.	15	.53	.04
8:00 a. m.	20	1.43	.03	5:07 a. m.	2	.05	1.50	1:45 p. m.	15	.54	.04
8:20 a. m.	20	1.43	0	5:10 a. m.	3	.26	4.20	2:00 p. m.	15	.56	.08
8:40 a. m.	20	1.44	.03	5:15 a. m.	5	.54	3.36	2:15 p. m.	15	.59	.12
9:00 a. m.	20	1.46	.06	5:17 a. m.	2	.55	.30	2:20 p. m.	5	.60	.12
9:20 a. m.	20	1.47	.03	5:20 a. m.	3	.56	.20	2:25 p. m.	5	.62	.24
10:00 a. m.	40	1.47	0	7:34 a. m.	134	.56	0	2:29 p. m.	4	.63	.15
10:20 a. m. ³	20	1.48	.03	7:35 a. m.	1	.65	5.40	2:30 p. m.	1	.65	1.20
				7:38 a. m.	3	.76	2.20	2:45 p. m.	15	.76	.44
				7:40 a. m.	2	.80	1.20	3:00 p. m.	15	.81	.20
				7:43 a. m.	3	.83	.60	3:15 p. m.	15	.84	.12
				7:45 a. m.	2	.90	2.10	3:20 p. m.	5	.85	.12
				7:47 a. m.	2	.97	2.10	3:25 p. m.	5	.86	.12
				7:50 a. m.	3	1.04	1.40	3:45 p. m.	20	.86	0
				7:55 a. m.	5	1.13	1.08	4:00 p. m.	15	.89	.12
				8:00 a. m.	5	1.23	1.20	4:15 p. m.	15	.99	.40
				8:05 a. m.	5	1.29	.72	4:30 p. m.	15	1.09	.40
				8:10 a. m.	5	1.34	.60	4:35 p. m.	5	1.11	.24
				8:15 a. m.	5	1.40	.72	4:40 p. m.	5	1.12	.12
				8:20 a. m.	5	1.47	.84	4:45 p. m.	5	1.16	.48
				8:25 a. m.	5	1.55	.96	4:50 p. m.	5	1.18	.24
				9:27 a. m.	62	1.55	0	4:55 p. m.	5	1.20	.24
				9:30 a. m.	3	1.56	.20	5:00 p. m.	5	1.21	.12
				9:34 a. m.	4	1.57	.15	5:15 p. m.	15	1.25	.16
				12:26 p. m.	172	1.57	0	5:30 p. m.	15	1.30	.20
				12:30 p. m.	4	1.70	1.95	5:45 p. m.	15	1.32	.08
				12:35 p. m.	5	1.80	1.20	5:50 p. m.	5	1.33	.12
				12:40 p. m.	5	1.86	.72	5:55 p. m.	5	1.35	.24
				12:45 p. m.	5	1.92	.72	6:00 p. m.	2	1.39	.80
				12:50 p. m.	5	1.99	.84	6:05 p. m.	5	1.40	.30
				12:55 p. m.	5	2.04	.60	6:10 p. m.	5	1.41	.12
				1:00 p. m.	5	2.08	.48	6:15 p. m.	5	1.43	0
				1:05 p. m.	5	2.13	.60	6:16 p. m.	1	1.45	.24
				1:10 p. m.	5	2.18	.60	6:20 p. m.	4	1.46	1.20
				1:15 p. m.	5	2.22	.48	6:25 p. m.	5	1.47	.15
				1:20 p. m.	5	2.24	.24	6:30 p. m.	5	1.49	.12
				1:25 p. m.	5	2.25	.12	6:35 p. m.	5	1.51	.24
				1:30 p. m.	5	2.27	.24	7:00 p. m.	30	1.53	.04
				1:35 p. m.	5	2.29	.24	7:30 p. m.	30	1.53	0
				1:40 p. m.	5	2.30	.12	9:30 p. m.	120	1.53	.02
				1:45 p. m.	5	2.32	.24	10:00 p. m.	30	1.54	.02
				1:50 p. m.	5	2.35	.36	10:30 p. m.	30	1.55	.02
				1:55 p. m.	5	2.36	.12	10:34 p. m.	4	1.55	0
				2:00 p. m.	5	2.37	.12	10:35 p. m.	1	1.56	.60
				2:05 p. m.	5	2.39	.24	10:37 p. m.	2	1.58	.60
				2:10 p. m.	5	2.41	.24	10:40 p. m.	3	1.64	1.20
				2:15 p. m.	5	2.44	.36	10:45 p. m.	5	1.72	.96
								10:50 p. m.	5	1.76	.48
								10:55 p. m.	5	1.77	.12
								11:00 p. m.	5	1.77	0
								12:00 p. m.	60	1.78	.01

¹ For location of rainfall station see fig. 2.² Rain began.³ Rain ended.

TABLE 107.—Rainfall at station 100 for selected storms, 1939—Continued

Date and time	Time interval	Accumulated depth	Intensity	Date and time	Time interval	Accumulated depth	Intensity	Date and time	Time interval	Accumulated depth	Intensity
STORM OF OCT. 25-27—Continued				STORM OF OCT. 25-27—Continued				STORM OF OCT. 25-27—Continued			
Oct. 26:	Min.	In.	In. per hr.	Oct. 27—Con.	Min.	In.	In. per hr.	Oct. 27—Con.	Min.	In.	In. per hr.
1:00 a. m.-----	60	1.79	0.01	4:05 a. m.-----	5	0.01	0.12	8:30 a. m.-----	10	0.81	0.36
1:26 a. m.-----	26	1.79	0	4:08 a. m.-----	3	.03	.40	8:40 a. m.-----	10	.82	.06
1:30 a. m.-----	4	1.81	.30	4:10 a. m.-----	2	.04	.30	8:50 a. m.-----	10	.84	.12
2:05 a. m.-----	35	1.81	0	4:20 a. m.-----	10	.08	.24	9:00 a. m.-----	10	.86	.12
2:10 a. m.-----	5	1.82	.12	4:30 a. m.-----	10	.11	.18	9:25 a. m.-----	25	.86	0
2:15 a. m.-----	5	1.84	.24	4:40 a. m.-----	10	.14	.18	9:30 a. m.-----	5	.90	.48
8:35 a. m.-----	380	1.84	0	4:45 a. m.-----	5	.17	.36	9:35 a. m.-----	5	.99	1.08
8:40 a. m.-----	5	1.91	.84	4:50 a. m.-----	5	.24	.84	9:40 a. m.-----	5	1.06	.84
8:45 a. m.-----	5	1.96	.60	4:54 a. m.-----	4	.29	.75	9:50 a. m.-----	10	1.06	0
8:50 a. m.-----	5	1.99	.36	4:55 a. m.-----	1	.31	1.20	10:00 a. m.-----	10	1.07	.06
8:55 a. m.-----	5	2.02	.36	5:00 a. m.-----	5	.39	.96	10:10 a. m.-----	10	1.08	.06
9:00 a. m.-----	5	2.05	.36	5:05 a. m.-----	5	.49	1.20	10:28 a. m.-----	18	1.08	0
9:15 a. m.-----	15	2.11	.24	5:10 a. m.-----	5	.56	.84	10:30 a. m.-----	2	1.10	.60
9:30 a. m.-----	15	2.15	.16	5:20 a. m.-----	10	.59	.18	11:00 a. m.-----	30	1.10	0
9:45 a. m.-----	15	2.18	.12	5:30 a. m.-----	10	.61	.12	12:00 m.-----	60	1.11	.01
10:00 a. m.-----	15	2.24	.24	5:40 a. m.-----	10	.62	.06	1:00 p. m.-----	60	1.12	.01
10:15 a. m.-----	15	2.27	.12	6:00 a. m.-----	20	.62	0	1:42 p. m.-----	42	1.12	0
10:30 a. m.-----	15	2.29	.08	6:30 a. m.-----	30	.63	.02	1:43 p. m.-----	1	1.18	3.60
10:45 a. m.-----	15	2.32	.12	6:55 a. m.-----	25	.63	0	1:45 p. m.-----	2	1.20	.60
11:00 a. m.-----	15	2.36	.16	7:00 a. m.-----	5	.65	.24	2:00 p. m.-----	15	1.21	.04
11:15 a. m.-----	15	2.42	.24	7:05 a. m.-----	5	.66	.12	3:24 p. m.-----	84	1.21	0
11:30 a. m.-----	15	2.46	.16	7:30 a. m.-----	25	.66	0	3:25 p. m.-----	1	1.22	.60
11:45 a. m.-----	15	2.47	.04	7:40 a. m.-----	10	.67	.06	3:26 p. m.-----	1	1.23	.60
11:50 a. m.-----	5	2.48	.12	7:50 a. m.-----	10	.68	.06	3:30 p. m.-----	4	1.24	.15
11:55 a. m.-----	5	2.52	.48	8:00 a. m.-----	10	.71	.18	4:00 p. m.-----	30	1.25	.02
12:00 m.-----	5	2.54	.24	8:10 a. m.-----	10	.72	.06	4:30 p. m.-----	30	1.26	0
12:10 p. m. ³ -----	10	2.55	.06	8:15 a. m.-----	5	.73	.12	5:00 p. m.-----	30	1.26	0.2
Oct. 27:				8:20 a. m.-----	5	.75	.24	6:00 p. m. ³ -----	60	1.28	.20
4:00 a. m. ¹ -----		0	0								

¹ Rain began.³ Rain ended.TABLE 108.—Rainfall at station Y101¹ for selected storms, 1939

Date and time	Time interval	Accumulated depth	Intensity	Date and time	Time interval	Accumulated depth	Intensity	Date and time	Time interval	Accumulated depth	Intensity
STORM OF FEB. 14-15				STORM OF FEB. 14-15—Continued				STORM OF JUNE 18-19—Continued			
Feb. 14:	Min.	In.	In. per hr.	Feb 15—Con.	Min.	In.	In. per hr.	June 18—Con.	Min.	In.	In. per hr.
8:30 p. m. ¹ -----		0	0	9:40 a. m.-----	20	1.35	0.03	12:30 p. m.-----	5	1.35	0.24
8:50 p. m.-----	20	.01	.03	10:00 a. m.-----	20	1.36	.03	2:30 p. m.-----	120	1.35	0
9:00 p. m.-----	10	.01	0	10:30 a. m. ³ -----	30	1.38	.04	2:40 p. m.-----	10	1.36	.06
9:20 p. m.-----	20	.02	.03					2:50 p. m.-----	10	1.37	.06
9:40 p. m.-----	20	.03	.03	STORM OF JUNE 18-19				4:40 p. m.-----	110	1.37	0
10:00 p. m.-----	20	.04	.03	June 18:				4:50 p. m.-----	10	1.38	.06
10:20 p. m.-----	20	.06	.06	7:30 a. m. ² -----		0	0	5:00 p. m.-----	10	1.39	.06
10:40 p. m.-----	20	.08	.06	7:40 a. m.-----	10	.01	.06	5:20 p. m.-----	20	1.39	T
11:00 p. m.-----	20	.11	.09	7:50 a. m.-----	10	.02	.06	5:40 p. m.-----	20	1.40	.03
11:20 p. m.-----	20	.15	.12	8:00 a. m.-----	10	.03	.06	6:00 p. m.-----	20	1.41	.03
11:40 p. m.-----	20	.18	.09	8:10 a. m.-----	10	.08	.30	6:20 p. m.-----	20	1.42	.03
12:00 p. m.-----	20	.21	.09	8:20 a. m.-----	10	.08	T	6:40 p. m.-----	20	1.48	.18
Feb. 15:				8:30 a. m.-----	10	.09	.06	6:50 p. m.-----	10	1.54	.36
12:10 a. m.-----	10	.23	.12	8:40 a. m.-----	10	.11	.12	7:00 p. m.-----	10	1.58	.24
12:20 a. m.-----	10	.26	.18	8:50 a. m.-----	10	.13	.12	7:10 p. m.-----	10	1.62	.24
12:30 a. m.-----	10	.29	.18	8:57 a. m.-----	7	.22	.79	7:20 p. m.-----	10	1.64	.12
12:40 a. m.-----	10	.31	.12	9:00 a. m.-----	3	.23	.20	7:30 p. m.-----	10	1.65	.06
12:45 a. m.-----	5	.32	.12	9:05 a. m.-----	5	.25	.24	7:50 p. m.-----	20	1.65	T
12:50 a. m.-----	5	.35	.36	9:09 a. m.-----	4	.29	.60	8:00 p. m.-----	10	1.66	.06
1:00 a. m.-----	10	.41	.36	9:10 a. m.-----	1	.30	.60	8:10 p. m.-----	10	1.67	.06
1:10 a. m.-----	10	.45	.24	9:20 a. m.-----	10	.31	.06	9:30 p. m.-----	80	1.67	0
1:20 a. m.-----	10	.51	.36	9:30 a. m.-----	10	.33	.12	9:40 p. m.-----	10	1.70	.18
1:30 a. m.-----	10	.58	.42	9:40 a. m.-----	10	.36	.18	9:50 p. m.-----	10	1.71	.06
1:40 a. m.-----	10	.64	.36	9:50 a. m.-----	10	.40	.24	10:00 p. m.-----	10	1.72	.06
1:50 a. m.-----	10	.70	.36	10:00 a. m.-----	10	.42	.12	10:10 p. m.-----	10	1.75	.18
2:00 a. m.-----	10	.76	.36	10:10 a. m.-----	10	.44	.12	10:40 p. m.-----	30	1.75	T
2:10 a. m.-----	10	.81	.30	10:20 a. m.-----	10	.47	.18	10:50 p. m.-----	10	1.77	.12
2:20 a. m.-----	10	.86	.30	10:30 a. m.-----	10	.53	.36	11:00 p. m.-----	10	1.79	.12
2:30 a. m.-----	10	.91	.30	10:40 a. m.-----	10	.55	.12	11:40 p. m.-----	40	1.79	T
2:40 a. m.-----	10	.96	.30	10:50 a. m.-----	10	.57	.12	11:50 p. m.-----	10	1.82	.18
2:50 a. m.-----	10	1.00	.24	11:00 a. m.-----	10	.61	.24	11:55 p. m.-----	5	1.87	.60
3:00 a. m.-----	10	1.04	.24	11:05 a. m.-----	5	.67	.72	12:00 p. m.-----	5	1.89	.24
3:10 a. m.-----	10	1.07	.18	11:10 a. m.-----	5	.73	.72	June 19:			
3:20 a. m.-----	10	1.10	.18	11:15 a. m.-----	5	.80	.84	12:10 a. m.-----	10	1.92	.18
3:30 a. m.-----	10	1.13	.18	11:20 a. m.-----	5	.87	.84	12:20 a. m.-----	10	2.04	.72
3:40 a. m.-----	10	1.16	.18	11:25 a. m.-----	5	.92	.60	12:25 a. m.-----	5	2.09	.60
3:50 a. m.-----	10	1.17	.06	11:30 a. m.-----	5	.99	.84	12:30 a. m.-----	5	2.17	.96
4:00 a. m.-----	10	1.19	.12	11:40 a. m.-----	10	1.06	.42	12:35 a. m.-----	5	2.21	.48
4:20 a. m.-----	20	1.22	.09	11:45 a. m.-----	5	1.09	.36	12:40 a. m.-----	5	2.24	.36
4:40 a. m.-----	20	1.24	.06	11:50 a. m.-----	5	1.13	.48	12:50 a. m.-----	10	2.28	.24
5:00 a. m.-----	20	1.25	.03	12:00 m.-----	10	1.15	.12	1:00 a. m.-----	10	2.30	.12
6:00 a. m.-----	60	1.27	.02	12:10 p. m.-----	10	1.16	.06	1:10 a. m.-----	10	2.30	T
7:00 a. m.-----	60	1.28	.01	12:15 p. m.-----	5	1.18	.24	1:20 a. m.-----	10	2.32	.12
8:00 a. m.-----	60	1.30	.02	12:20 p. m.-----	5	1.24	.22	2:40 a. m.-----	80	2.32	0
8:20 a. m.-----	20	1.31	.03	12:25 p. m.-----	5	1.33	1.08	2:50 a. m.-----	10	2.35	.18
8:40 a. m.-----	20	1.32	.03					3:00 a. m.-----	10	2.39	.24
9:00 a. m.-----	20	1.33	.03					3:10 a. m.-----	10	2.42	.18
9:20 a. m.-----	20	1.34	.03					3:20 a. m.-----	10	2.47	.30

¹For location of rainfall station see fig. 2.² Rain began.³ Rain ended.

TABLE 108.—Rainfall at station Y101 for selected storms, 1939—Continued

Date and time	Time interval	Accumulated depth	Intensity	Date and time	Time interval	Accumulated depth	Intensity	Date and time	Time interval	Accumulated depth	Intensity
STORM OF JUNE 18-19—Continued				STORM OF OCT. 25-27—Continued				STORM OF OCT. 25-27—Continued			
June 19—Con.	Min.	In.	In. per hr.	Oct. 25—Con.	Min.	In.	In. per hr.	Oct. 26—Con.	Min.	In.	In. per hr.
3:30 a. m.	10	2.52	0.30	2:30 p. m.	15	0.61	0.16	8:52 a. m.	2	2.69	0.60
3:40 a. m.	10	2.54	.12	2:32 p. m.	2	.62	.30	8:55 a. m.	3	2.70	.20
3:50 a. m.	10	2.56	.12	2:35 p. m.	3	.67	1.00	9:00 a. m.	5	2.71	.12
4:00 a. m.	10	2.58	.12	2:40 p. m.	5	.71	.48	9:05 a. m.	5	2.72	.12
4:10 a. m.	10	2.60	.12	2:50 p. m.	10	.77	.36	10:00 a. m.	55	2.72	0
4:20 a. m.	10	2.60	T	3:00 p. m.	10	.80	.18	11:00 a. m.	60	2.74	.02
4:30 a. m.	10	2.61	.06	3:10 p. m.	10	.83	.18	12:30 p. m.	90	2.74	0
4:40 a. m.	10	2.62	.06	3:15 p. m.	5	.84	.12	1:00 p. m. ³	30	2.75	.02
4:50 a. m.	10	2.63	.06	3:18 p. m.	3	.85	.20	Oct. 27:			
6:50 a. m.	120	2.63	0	3:20 p. m.	2	.86	.30	4:07 a. m. ²	-----	0	0
7:00 a. m.	10	2.65	.12	3:25 p. m.	5	.86	0	4:10 a. m.	3	.01	.20
7:10 a. m.	10	2.66	.06	3:30 p. m.	5	.87	.12	4:20 a. m.	10	.05	.24
7:30 a. m.	10	2.66	T	3:50 p. m.	20	.87	0	4:30 a. m.	10	.08	.18
7:40 a. m.	10	2.70	.24	4:00 p. m.	10	.89	.12	4:40 a. m.	10	.10	.12
7:50 a. m.	10	2.73	.18	4:10 p. m.	10	.96	.42	4:45 a. m.	5	.13	.36
8:00 a. m.	10	2.75	.12	4:20 p. m.	10	1.04	.48	4:50 a. m.	5	.20	.84
8:20 a. m.	20	2.77	.12	4:30 p. m.	10	1.11	.42	4:55 a. m.	5	.27	.84
8:30 a. m.	10	2.79	.12	4:35 p. m.	5	1.14	.36	4:57 a. m.	2	.32	1.50
8:40 a. m.	10	2.81	.12	4:40 p. m.	5	1.16	.24	5:00 a. m.	3	.35	.60
8:50 a. m. ³	10	2.82	.06	4:45 p. m.	5	1.17	.12	5:04 a. m.	4	.46	1.65
				4:49 p. m.	4	1.22	.75	5:05 a. m.	1	.47	.60
				4:50 p. m.	1	1.22	0	5:10 a. m.	5	.55	.96
				5:00 p. m.	10	1.25	.18	5:20 a. m.	10	.58	.18
				5:10 p. m.	10	1.29	.24	5:30 a. m.	10	.61	.18
				5:20 p. m.	10	1.32	.18	6:00 a. m.	30	.62	.02
				5:30 p. m.	10	1.35	.18	6:30 a. m.	30	.63	.02
				5:40 p. m.	10	1.37	.12	6:54 a. m.	24	.63	0
				5:50 p. m.	10	1.38	.06	6:55 a. m.	1	.66	1.80
				5:55 p. m.	5	1.39	.12	7:00 a. m.	5	.67	.12
				6:00 p. m.	5	1.44	.60	7:30 a. m.	30	.68	.02
				6:01 p. m.	1	1.46	1.20	7:40 a. m.	10	.68	0
				6:05 p. m.	4	1.47	.15	7:45 a. m.	5	.69	.12
				6:10 p. m.	5	1.48	.12	7:50 a. m.	5	.70	.12
				6:15 p. m.	5	1.49	.12	7:55 a. m.	5	.71	.12
				6:20 p. m.	5	1.53	.48	8:00 a. m.	5	.71	0
				6:25 p. m.	5	1.54	.12	8:10 a. m.	10	.74	.18
				6:30 p. m.	5	1.56	.24	8:20 a. m.	10	.76	.12
				6:45 p. m.	15	1.58	.08	8:30 a. m.	10	.83	.42
				7:00 p. m.	15	1.59	.04	8:40 a. m.	10	.84	.06
				7:15 p. m.	15	1.60	.04	8:50 a. m.	10	.86	.12
				7:30 p. m.	15	1.62	.08	9:00 a. m.	10	.89	.18
				9:45 p. m.	135	1.62	0	9:25 a. m.	25	.89	0
				10:00 p. m.	15	1.63	.04	9:30 a. m.	5	.93	.48
				10:37 p. m.	37	1.63	0	9:32 a. m.	2	.96	.90
				10:40 p. m.	3	1.74	2.20	9:33 a. m.	1	.99	1.80
				10:45 p. m.	5	1.87	1.56	9:35 a. m.	2	1.01	.60
				10:50 p. m.	5	1.87	0	9:40 a. m.	5	1.12	1.32
				10:55 p. m.	5	1.89	.24	9:41 a. m.	1	1.13	.60
				11:00 p. m.	5	1.90	.12	10:00 a. m.	19	1.13	0
				11:15 p. m.	15	1.91	.04	10:10 a. m.	10	1.15	.12
				Oct 26:				10:29 a. m.	19	1.15	0
				1:10 a. m.	115	1.91	0	10:30 a. m.	1	1.17	1.20
				1:20 a. m.	10	1.92	.06	11:00 a. m.	30	1.17	0
				1:25 a. m.	5	1.92	0	12:00 m.	60	1.18	.01
				1:29 a. m.	4	1.93	.15	1:00 p. m.	60	1.19	.01
				1:30 a. m.	1	1.94	.60	1:15 p. m.	15	1.20	.04
				1:35 a. m.	5	1.95	.12	1:30 p. m.	15	1.21	.04
				2:10 a. m.	35	1.95	0	1:41 p. m.	11	1.21	0
				2:15 a. m.	5	1.97	.24	1:44 p. m.	3	1.30	1.80
				8:26 a. m.	371	1.97	0	3:25 p. m.	101	1.30	0
				8:27 a. m.	1	1.99	1.20	3:30 p. m.	5	1.33	.36
				8:38 a. m.	11	1.99	0	3:45 p. m.	15	1.34	.04
				8:40 a. m.	2	2.08	2.70	4:00 p. m.	15	1.35	.04
				8:45 a. m.	5	2.38	3.60	5:00 p. m.	60	1.35	0
				8:46 a. m.	1	2.40	1.20	5:30 p. m.	30	1.37	.04
				8:50 a. m.	4	2.67	4.05	6:00 p. m.	30	1.39	.04

¹ Rain began.³ Rain ended.

TABLE 109.—*Rainfall at station 102¹ for selected storms, 1939*

STORM OF FEB. 14-15				STORM OF JUNE 18-19				STORM OF JULY 8-Continued			
Date and time	Time interval	Accumulated depth	Intensity	Date and time	Time interval	Accumulated depth	Intensity	Date and time	Time interval	Accumulated depth	Intensity
Feb. 14:				June 18-Con.				July 8-Con.			
8:30 p. m. ²	Min.	In.	In. per hr.	11:40 a. m.	Min.	In.	In. per hr.	8:00 a. m.	Min.	In.	In. per hr.
8:45 p. m.	15	.01	0.04	11:50 a. m.	10	1.18	0.48	8:10 a. m.	2	1.66	0.90
9:00 p. m.	15	.02	.04	12:00 m.	10	1.21	.18	8:15 a. m.	10	1.74	.48
9:15 p. m.	15	.04	.08	12:10 p. m.	10	1.24	.18	8:20 a. m.	5	1.75	.12
9:30 p. m.	15	.04	0	12:15 p. m.	10	1.25	.06	12:26 p. m.	251	1.75	0
9:45 p. m.	15	.05	.04	12:20 p. m.	5	1.30	.60	12:29 p. m.	3	1.85	2.00
10:00 p. m.	15	.06	.04	12:25 p. m.	5	1.36	.72	12:30 p. m.	1	1.96	6.60
10:15 p. m.	15	.07	.04	12:30 p. m.	5	1.40	.48	12:32 p. m.	2	2.08	2.40
10:30 p. m.	15	.08	.04	12:35 p. m.	5	1.41	.12	12:34 p. m.	2	2.09	.30
10:45 p. m.	15	.10	.08	12:40 p. m.	10	1.42	.06	12:40 p. m.	6	2.09	0
11:00 p. m.	15	.13	.12	1:00 p. m.	20	1.43	.06	12:43 p. m.	3	2.10	.20
11:15 p. m.	15	.15	.08	1:10 p. m.	10	1.43	T	12:44 p. m.	1	2.14	2.40
11:30 p. m.	15	.18	.12	1:15 p. m.	5	1.44	.12	12:46 p. m.	2	2.24	3.00
11:45 p. m.	15	.20	.08	4:40 p. m.	205	1.44	0	12:48 p. m.	2	2.27	.90
12:00 p. m.	15	.23	.12	4:45 p. m.	5	1.46	.24	12:50 p. m.	2	2.35	2.40
Feb. 15:				5:30 p. m.	45	1.46	0	12:55 p. m.	5	2.40	.60
12:15 a. m.	15	.27	.16	5:40 p. m.	10	1.47	.06	1:00 p. m.	5	2.48	.96
12:30 a. m.	15	.31	.16	5:50 p. m.	10	1.48	.06	1:04 p. m.	4	2.52	.60
12:45 a. m.	15	.34	.12	6:00 p. m.	10	1.49	.06	1:10 p. m.	6	2.54	.20
12:50 a. m.	5	.38	.48	6:37 p. m.	37	1.49	0	1:20 p. m.	10	2.55	.06
1:00 a. m.	10	.43	.30	6:40 p. m.	3	1.51	.40	1:30 p. m.	10	2.55	0
1:10 a. m.	10	.47	.24	6:50 p. m.	10	1.54	.18	1:40 p. m.	10	2.56	.06
1:20 a. m.	10	.53	.36	7:00 p. m.	10	1.62	.48	1:50 p. m.	10	2.58	.12
1:30 a. m.	10	.59	.36	7:10 p. m.	10	1.66	.24	1:53 p. m.	3	2.59	.20
1:40 a. m.	10	.65	.36	7:20 p. m.	10	1.70	.24	2:00 p. m. ³	7	2.60	.17
1:50 a. m.	10	.72	.42	7:30 p. m.	10	1.73	.18				
2:00 a. m.	10	.76	.24	7:40 p. m.	10	1.75	.12				
2:10 a. m.	10	.81	.30	7:50 p. m.	10	1.75	T				
2:20 a. m.	10	.87	.36	8:00 p. m.	10	1.77	.12				
2:30 a. m.	10	.92	.30	9:30 p. m.	90	1.77	0				
2:40 a. m.	10	.96	.24	9:40 p. m.	10	1.82	.30				
2:50 a. m.	10	1.02	.36	9:50 p. m.	10	1.85	.18				
3:00 a. m.	10	1.05	.18	10:00 p. m.	10	1.87	.12				
3:15 a. m.	15	1.08	.12	10:10 p. m.	10	1.89	.12				
3:30 a. m.	15	1.12	.16	10:45 p. m.	35	1.89	0				
3:45 a. m.	15	1.16	.16	10:50 p. m.	5	1.91	.24				
4:00 a. m.	15	1.18	.08	11:10 p. m.	20	1.91	0				
4:15 a. m.	15	1.21	.12	11:20 p. m.	10	1.93	.12				
4:30 a. m.	15	1.22	.04	11:30 p. m.	10	1.94	.06				
4:45 a. m.	15	1.24	.08	11:40 p. m.	10	1.95	.06				
5:00 a. m.	15	1.25	.04	11:45 p. m.	5	1.96	.12				
5:15 a. m.	15	1.26	.04	11:50 p. m.	5	1.98	.24				
5:30 a. m.	15	1.27	.04	11:55 p. m.	5	2.00	.24				
6:00 a. m.	30	1.28	.02	12:00 m.	5	2.02	.24				
6:30 a. m.	30	1.28	0	June 19:							
7:00 a. m.	30	1.29	.02	12:03 a. m.	3	2.05	.60				
7:30 a. m.	30	1.30	.02	12:05 a. m.	2	2.06	.30				
8:00 a. m.	30	1.31	.02	12:10 a. m.	5	2.12	.72				
8:30 a. m.	30	1.32	.02	12:20 a. m.	10	2.19	.42				
9:00 a. m.	30	1.33	.02	12:30 a. m.	10	2.27	.48				
10:00 a. m.	60	1.34	.01	12:40 a. m.	10	2.31	.24				
11:00 a. m.	60	1.35	.01	12:50 a. m.	10	2.35	.24				
12:00 m.	60	1.35	0	1:00 a. m.	10	2.36	.06				
1:00 p. m. ³	60	1.36	.01	1:10 a. m.	10	2.38	.12				
STORM OF JUNE 18-19				2:35 a. m.	85	2.38	0				
				2:40 a. m.	5	2.39	.12				
				2:50 a. m.	10	2.41	.12				
				3:00 a. m.	10	2.44	.18				
				3:10 a. m.	10	2.48	.24				
				3:20 a. m.	10	2.51	.18				
				3:30 a. m.	10	2.55	.24				
				3:40 a. m.	10	2.56	.06				
				3:50 a. m.	10	2.57	.06				
				4:00 a. m.	10	2.58	.06				
				4:10 a. m.	10	2.58	T				
				4:20 a. m.	10	2.59	.06				
				4:30 a. m.	190	2.59	0				
				7:40 a. m.	10	2.60	.06				
				7:50 a. m.	10	2.61	.06				
				8:00 a. m.	10	2.62	.06				
				8:10 a. m. ³	10	2.64	.12				
				STORM OF JULY 8							
				July 8:							
				5:05 a. m. ²	-----	0	0				
				5:06 a. m.	1	.03	1.80				
				5:08 a. m.	2	.16	3.90				
				5:10 a. m.	2	.32	4.80				
				5:15 a. m.	5	.59	2.04				
				5:20 a. m.	5	.62	.36				
				7:33 a. m.	133	.62	0				
				7:34 a. m.	1	.70	4.80				
				7:36 a. m.	2	.82	3.60				
				7:38 a. m.	2	.91	2.70				
				7:40 a. m.	2	.92	.30				
				7:42 a. m.	2	.92	0				
				7:45 a. m.	3	1.05	2.60				
				7:50 a. m.	5	1.28	2.76				
				7:52 a. m.	2	1.34	1.80				
				7:54 a. m.	2	1.48	4.20				
				7:58 a. m.	4	1.63	2.25				

¹ For location of rainfall station see fig. 2.

² Rain began.

³ Rain ended.

TABLE 109.—Rainfall at station 102 for selected storms, 1939—Continued

Date and time	Time interval	Accumulated depth	Intensity	Date and time	Time interval	Accumulated depth	Intensity	Date and time	Time interval	Accumulated depth	Intensity
STORM OF OCT. 25-27—Continued				STORM OF OCT 25-27—Continued				STORM OF OCT. 25-27—Continued			
Oct. 25—Con.	Min.	In.	In. per hr.	Oct. 26—Con.	Min.	In.	In. per hr.	Oct. 27—Con.	Min.	In.	In. per hr.
6:10 p. m.	10	1.48	0.12	8:30 a. m.	360	1.89	0	5:05 a. m.	5	0.51	1.20
6:15 p. m.	5	1.51	.36	8:34 a. m.	4	2.00	1.65	5:10 a. m.	5	.56	.60
6:20 p. m.	5	1.52	.12	8:36 a. m.	2	2.10	3.00	5:20 a. m.	10	.58	.12
6:30 p. m.	10	1.55	.18	8:37 a. m.	1	2.21	6.60	5:30 a. m.	10	.61	0.18
6:40 p. m.	10	1.57	.12	8:38 a. m.	1	2.31	6.00	6:40 a. m.	70	.61	.06
7:00 p. m.	20	1.59	.06	8:40 a. m.	2	2.41	3.00	6:50 a. m.	10	.62	.06
7:20 p. m.	20	1.61	.06	8:42 a. m.	2	2.52	3.30	7:00 a. m.	10	.65	0.18
9:30 p. m.	130	1.61	0	8:44 a. m.	2	2.59	2.10	7:30 a. m.	30	.65	.06
9:40 p. m.	10	1.63	.12	8:50 a. m.	6	2.61	.20	7:40 a. m.	10	.66	.06
10:30 p. m.	50	1.63	0	9:00 a. m.	10	2.62	.06	7:45 a. m.	5	.68	.24
10:32 p. m.	2	1.64	.30	9:10 a. m.	10	2.63	.06	7:50 a. m.	5	.70	.24
10:34 p. m.	2	1.70	1.80	9:20 a. m. ³	10	2.64	.06	8:00 a. m.	10	.71	.06
10:40 p. m.	6	1.81	1.10	Oct. 27:				8:10 a. m.	10	.72	.06
10:50 p. m.	10	1.82	.06	4:00 a. m. ²		0	0	8:20 a. m.	10	.77	.06
Oct. 26:				4:10 a. m.	10	.02	.12	8:30 a. m.	10	.80	.30
1:20 a. m.	170	1.82	0	4:20 a. m.	10	.06	.24	8:40 a. m.	10	.81	.18
1:24 a. m.	4	1.84	.30	4:30 a. m.	10	.09	.18	8:50 a. m.	10	.82	.06
1:30 a. m.	6	1.85	.10	4:40 a. m.	10	.12	.18	9:00 a. m.	10	.84	.06
2:00 a. m.	30	1.85	0	4:45 a. m.	5	.18	.72	9:30 a. m.	30	.84	0.12
2:10 a. m.	10	1.86	.06	4:50 a. m.	5	.26	.96	9:35 a. m.	5	.93	1.08
2:20 a. m.	10	1.87	.06	4:55 a. m.	5	.36	1.20	9:40 a. m. ³	5	.97	.48
2:30 a. m.	10	1.89	.12	5:00 a. m.	5	.41	.60				

² Rain began.³ Rain ended.TABLE 110.—Rainfall at station Y102¹ for selected storms, 1939

Date and time	Time interval	Accumulated depth	Intensity	Date and time	Time interval	Accumulated depth	Intensity	Date and time	Time interval	Accumulated depth	Intensity
STORM OF FEB. 14-15				STORM OF JUNE 18-19—Continued				STORM OF JUNE 18-19—Continued			
[Record missing]				June 18—Con.	Min.	In.	In. per hr.	June 19—Con.	Min.	In.	In. per hr.
STORM OF JUNE 18-19				7:00 p. m.	5	1.61	0.36	8:20 a. m.	10	2.82	T
June 18:	Min.	In.	In. per hr.	7:10 p. m.	10	1.63	.12	8:30 a. m. ²	10	2.83	0.06
7:35 a. m. ²		0	0	7:20 p. m.	10	1.65	.12	STORM OF JULY 8			
7:40 a. m.	5	.03	.36	7:30 p. m.	10	1.67	.12	July 8:			
7:50 a. m.	10	.05	.12	7:40 p. m.	10	1.69	.12	5:11 a. m. ²		0	0
8:00 a. m.	10	.08	.18	7:50 p. m.	10	1.71	.12	5:12 a. m.	1	.06	3.60
8:10 a. m.	10	.11	.18	8:00 p. m.	10	1.73	.12	5:13 a. m.	1	.12	3.60
8:20 a. m.	10	.13	.12	8:05 p. m.	95	1.73	0	5:14 a. m.	1	.20	4.80
8:30 a. m.	10	.15	.12	9:40 p. m.	5	1.77	.48	5:15 a. m.	1	.28	4.80
8:40 a. m.	10	.16	.06	9:50 p. m.	10	1.79	.12	5:16 a. m.	1	.36	4.80
8:50 a. m.	10	.21	.30	10:00 p. m.	10	1.81	.12	5:17 a. m.	1	.44	4.80
8:52 a. m.	2	.25	1.20	10:10 p. m.	10	1.83	T	5:18 a. m.	1	.50	3.60
9:00 a. m.	8	.30	.38	11:20 p. m.	70	1.83	.12	5:19 a. m.	1	.54	2.40
9:05 a. m.	5	.35	.60	11:30 p. m.	10	1.84	.06	5:20 a. m.	1	.57	1.80
9:10 a. m.	5	.36	.12	11:40 p. m.	10	1.86	.12	5:22 a. m. ³	2	.59	.60
9:20 a. m.	10	.38	.12	11:50 p. m.	10	1.88	.12	7:39 a. m. ²	137	.59	0
9:30 a. m.	10	.40	.12	12:00 m.	10	1.93	.30	7:40 a. m.	1	.68	5.40
9:40 a. m.	10	.42	.12	June 19:				7:42 a. m.	2	.74	1.80
9:50 a. m.	10	.46	.24	12:10 a. m.	10	1.97	.24	7:43 a. m.	1	.76	1.20
10:00 a. m.	10	.48	.12	12:20 a. m.	10	2.09	.72	7:44 a. m.	1	.78	1.20
10:10 a. m.	10	.50	.12	12:25 a. m.	5	2.14	.60	7:46 a. m.	2	.80	.60
10:20 a. m.	10	.52	.12	12:30 a. m.	5	2.20	.72	7:48 a. m.	2	.81	.30
10:30 a. m.	10	.57	.30	12:40 a. m.	10	2.28	.48	7:50 a. m.	2	.90	2.70
10:40 a. m.	10	.60	.18	12:50 a. m.	10	2.31	.18	7:51 a. m.	1	.95	3.00
10:50 a. m.	10	.63	.18	1:00 a. m.	10	2.32	.06	7:52 a. m.	1	.99	2.40
11:00 a. m.	10	.67	.24	1:10 a. m.	10	2.33	.06	7:53 a. m.	1	1.03	2.40
11:10 a. m.	10	.79	.72	1:20 a. m.	10	2.34	.06	7:54 a. m.	1	1.08	3.00
11:20 a. m.	10	.93	.78	1:30 a. m.	10	2.34	0	7:58 a. m.	4	1.32	3.60
11:27 a. m.	7	1.01	.69	1:40 a. m.	5	2.35	.12	8:00 a. m.	2	1.38	1.80
11:30 a. m.	3	1.06	1.00	1:50 a. m.	10	2.39	.24	8:03 a. m.	3	1.46	1.60
11:40 a. m.	10	1.14	.48	2:00 a. m.	10	2.42	.18	8:04 a. m.	1	1.50	2.40
11:50 a. m.	10	1.19	.30	3:10 a. m.	10	2.45	.18	8:08 a. m.	4	1.52	.30
12:00 m.	10	1.21	.12	3:20 a. m.	10	2.49	.24	8:13 a. m.	5	1.56	.48
12:10 p. m.	10	1.22	.06	3:30 a. m.	10	2.53	.24	8:18 a. m.	5	1.58	.24
12:20 p. m.	10	1.30	.48	3:40 a. m.	10	2.56	.18	8:20 a. m.	2	1.59	.30
12:25 p. m.	5	1.36	.72	3:50 a. m.	10	2.58	.12	9:40 a. m.	80	1.59	0
12:30 p. m.	5	1.38	.24	4:00 a. m.	10	2.60	.12	10:28 a. m. ³	48	1.61	.02
12:40 p. m.	10	1.39	.06	4:10 a. m.	10	2.62	.12	12:12 p. m. ²	104	1.61	0
2:35 p. m.	115	1.39	0	4:20 a. m.	10	2.63	.06	12:16 p. m.	4	1.62	.15
2:40 p. m.	5	1.41	.24	4:30 a. m.	10	2.65	.06	12:31 p. m.	15	1.62	0
4:40 p. m.	120	1.41	0	4:40 a. m.	10	2.66	.06	12:32 p. m.	1	1.67	3.00
4:50 p. m.	10	1.43	.12	4:50 a. m.	10	2.67	.03	12:33 p. m.	1	1.74	4.20
5:00 p. m.	10	1.44	.06	5:00 a. m.	20	2.67	T	12:34 p. m.	1	1.82	4.80
5:30 p. m.	30	1.44	T	6:00 a. m.	20	2.68	.03	12:35 p. m.	1	1.90	4.80
5:40 p. m.	10	1.45	.06	6:20 a. m.	20	2.69	.03	12:36 p. m.	1	1.94	2.40
5:50 p. m.	10	1.46	.06	6:40 a. m.	20	2.70	.03	12:37 p. m.	1	1.96	1.20
6:35 p. m.	45	1.46	0	7:00 a. m.	20	2.73	.18	12:49 p. m.	12	1.96	0
6:40 p. m.	5	1.47	.12	7:20 a. m.	10	2.77	.24	12:50 p. m.	1	2.00	2.40
6:50 p. m.	10	1.53	.36	7:30 a. m.	10	2.80	.18	12:52 p. m.	2	2.10	3.00
6:55 p. m.	5	1.58	.60	7:40 a. m.	10	2.81	.06				
				7:50 a. m.	10	2.82	.06				

¹ For location of rainfall station see fig. 2.² Rain began.³ Rain ended.

TABLE 110.—Rainfall at station Y102 for selected storms, 1939—Continued

Date and time	Time interval	Accumulated depth	Intensity	Date and time	Time interval	Accumulated depth	Intensity	Date and time	Time interval	Accumulated depth	Intensity
STORM OF JULY 8—Continued				STORM OF OCT. 25-27—Continued				STORM OF OCT. 25-27—Continued			
July 8—Con.	Min.	In.	In. per hr.	Oct. 25—Con.	Min.	In.	In. per hr.	Oct. 27—Con.	Min.	In.	In. per hr.
12:53 p. m.	1	2.17	4.20	4:05 p. m.	5	0.93	0.36	4:10 a. m.	1	0.06	1.80
12:54 p. m.	1	2.23	3.60	4:10 p. m.	5	.98	.60	4:20 a. m.	10	.12	.36
12:56 p. m.	2	2.30	2.10	4:15 p. m.	5	1.02	.48	4:30 a. m.	10	.15	.18
12:58 p. m.	2	2.32	.60	4:20 p. m.	5	1.05	.36	4:40 a. m.	10	.18	.18
1:02 p. m.	4	2.36	.60	4:25 p. m.	5	1.08	.36	4:45 a. m.	5	.21	.36
1:03 p. m.	1	2.38	1.20	4:28 p. m.	3	1.10	.40	4:50 a. m.	5	.28	.84
1:08 p. m.	5	2.42	.48	4:30 p. m.	2	1.13	.90	4:55 a. m.	5	.35	.84
1:13 p. m.	5	2.45	.36	4:35 p. m.	5	1.15	.24	5:00 a. m.	5	.45	1.20
1:18 p. m.	5	2.46	.12	4:40 p. m.	5	1.17	.24	5:05 a. m.	5	.54	1.08
1:48 p. m.	30	2.46	0	4:44 p. m.	4	1.18	.15	5:10 a. m.	5	.64	1.20
2:28 p. m. ¹	40	2.48	.03	4:45 p. m.	1	1.20	1.20	5:15 a. m.	5	.66	.24
				4:50 p. m.	5	1.24	.48	5:20 a. m.	5	.68	.24
				4:55 p. m.	5	1.25	.12	5:25 a. m.	5	.69	.12
				5:00 p. m.	5	1.26	.12	5:30 a. m.	5	.71	.24
				5:15 p. m.	15	1.32	.24	5:35 a. m.	5	.72	.12
				5:30 p. m.	15	1.36	.16	6:00 a. m.	25	.72	0
				5:45 p. m.	15	1.39	.12	6:30 a. m.	30	.74	.04
				5:50 p. m.	5	1.40	.12	6:55 a. m.	25	.74	0
				5:55 p. m.	5	1.41	.12	7:00 a. m.	5	.77	.36
				6:00 p. m.	5	1.47	.72	7:20 a. m.	20	.77	0
				6:05 p. m.	5	1.48	.12	7:30 a. m.	10	.78	.06
				6:10 p. m.	5	1.49	.12	7:40 a. m.	10	.78	0
				6:15 p. m.	5	1.50	.12	7:45 a. m.	5	.80	.24
				6:18 p. m.	3	1.53	.60	7:52 a. m.	7	.80	0
				6:20 p. m.	2	1.54	.30	7:55 a. m.	3	.82	.40
				6:25 p. m.	5	1.55	.12	8:00 a. m.	5	.83	.12
				6:30 p. m.	5	1.58	.36	8:10 a. m.	10	.85	.12
				6:35 p. m.	5	1.59	.12	8:20 a. m.	10	.86	.06
				6:40 p. m.	5	1.60	.12	8:30 a. m.	10	.92	.36
				6:45 p. m.	5	1.60	0	8:40 a. m.	10	.94	.12
				7:00 p. m.	15	1.61	.04	8:50 a. m.	10	.95	.06
				7:15 p. m.	15	1.62	.04	9:00 a. m.	10	.98	.18
				7:30 p. m.	15	1.63	.04	9:25 a. m.	25	.98	0
				7:45 p. m.	15	1.64	.04	9:30 a. m.	5	1.02	.48
				10:36 p. m.	171	1.64	0	9:33 a. m.	3	1.04	.40
				10:40 p. m.	4	1.74	1.50	9:34 a. m.	1	1.08	2.40
				10:42 p. m.	2	1.79	1.50	9:35 a. m.	1	1.09	.60
				10:45 p. m.	3	1.81	.40	9:40 a. m.	5	1.18	1.08
				10:50 p. m.	5	1.82	.12	9:41 a. m.	1	1.19	.60
				10:55 p. m.	5	1.83	.12	9:45 a. m.	4	1.19	0
				11:00 p. m.	5	1.84	.12	10:00 a. m.	15	1.20	.04
				11:30 p. m.	30	1.85	.02	10:15 a. m.	15	1.22	.08
				12:00 p. m.	30	1.86	.02	10:30 a. m.	15	1.22	0
				Oct. 26:				10:31 a. m.	1	1.24	1.20
				1:29 a. m.	89	1.86	0	11:00 a. m.	29	1.24	0
				1:30 a. m.	1	1.88	1.20	11:30 a. m.	30	1.25	.02
				1:35 a. m.	5	1.89	.12	12:30 p. m.	60	1.25	0
				2:10 a. m.	35	1.89	0	1:00 p. m.	30	1.26	.02
				2:20 a. m.	10	1.91	.12	1:30 p. m.	30	1.27	.02
				8:38 a. m.	378	1.91	0	1:41 p. m.	11	1.27	0
				8:40 a. m.	2	1.98	2.10	1:43 p. m.	2	1.35	2.40
				8:45 a. m.	5	2.32	4.08	1:45 p. m.	2	1.37	.60
				8:50 a. m.	5	2.57	3.00	1:50 p. m.	5	1.38	.12
				8:55 a. m.	5	2.61	.48	3:25 p. m.	95	1.38	0
				9:00 a. m.	5	2.62	.12	3:30 p. m.	5	1.40	.24
				9:15 a. m.	15	2.63	.04	3:35 p. m.	5	1.41	.12
				10:00 a. m.	45	2.63	0	4:35 p. m.	60	1.41	0
				11:00 a. m.	60	2.64	.01	4:40 p. m.	5	1.42	.12
				12:00 m. ³	60	2.65	.01	5:07 p. m.	27	1.42	0
				Oct. 27:				5:10 p. m.	3	1.43	.20
				4:03 a. m. ²		0	0	5:15 p. m.	5	1.44	.12
				4:05 a. m.	2	.01	.60	5:30 p. m.	15	1.44	0
				4:09 a. m.	4	.03	.30	6:00 p. m.	30	1.45	.02

¹ Rain began.² Rain ended.TABLE 111.—Rainfall at station 103¹ for selected storms, 1939

Date and time	Time interval	Accumulated depth	Intensity	Date and time	Time interval	Accumulated depth	Intensity	Date and time	Time interval	Accumulated depth	Intensity
STORM OF FEB. 14-15				STORM OF FEB. 14-15—Continued				STORM OF FEB. 14-15—Continued			
Feb. 14:	Min.	In.	In. per hr.	Feb. 15:	Min.	In.	In. per hr.	Feb. 15—Con.	Min.	In.	In. per hr.
8:30 p. m. ²		0	0	12:20 a. m.	20	0.28	0.12	2:30 a. m.	10	0.90	0.30
8:40 p. m.	10	.01	.06	12:30 a. m.	10	.31	.18	2:40 a. m.	10	.95	.30
9:00 p. m.	20	.02	.03	12:40 a. m.	10	.33	.12	2:50 a. m.	10	1.00	.30
9:20 p. m.	20	.03	.03	12:50 a. m.	10	.37	.24	3:00 a. m.	10	1.03	.18
9:40 p. m.	20	.04	.03	1:00 a. m.	10	.43	.36	3:10 a. m.	10	1.05	.12
10:00 p. m.	20	.05	.03	1:10 a. m.	10	.49	.36	3:20 a. m.	10	1.09	.24
10:20 p. m.	20	.07	.06	1:20 a. m.	10	.53	.24	3:30 a. m.	10	1.12	.18
10:30 p. m.	10	.08	.06	1:30 a. m.	10	.60	.42	3:40 a. m.	10	1.14	.12
10:40 p. m.	10	.10	.12	1:40 a. m.	10	.65	.30	3:50 a. m.	10	1.16	.12
11:00 p. m.	20	.13	.09	1:50 a. m.	10	.71	.36	4:00 a. m.	10	1.18	.12
11:20 p. m.	20	.16	.09	2:00 a. m.	10	.75	.24	4:20 a. m.	20	1.20	.06
11:40 p. m.	20	.20	.12	2:10 a. m.	10	.80	.30	4:40 a. m.	20	1.21	.03
12:00 p. m.	20	.24	.12	2:20 a. m.	10	.85	.30				

¹ For location of rainfall station see fig. 2.² Rain began.

TABLE 111.—Rainfall at station 103 for selected storms, 1939—Continued

Date and time	Time interval	Accumulated depth	Intensity	Date and time	Time interval	Accumulated depth	Intensity	Date and time	Time interval	Accumulated depth	Intensity
STORM OF FEB. 14-15—Continued				STORM OF JUNE 18-19—Continued				STORM OF OCT. 25-27—Continued			
Feb. 15—Con.	Min.	In.	In. per hr.	June 19—Con.	Min.	In.	In. per hr.	Oct. 25—Con.	Min.	In.	In. per hr.
5:00 a. m.	20	1.23	0.06	4:00 a. m.	15	2.25	0.04	12:45 p. m.	105	0.42	0
6:00 a. m.	60	1.24	.01	4:15 a. m.	15	2.27	.08	1:00 p. m.	15	.44	.08
7:00 a. m.	60	1.25	.01	4:30 a. m.	15	2.29	.08	1:15 p. m.	15	.47	.12
8:00 a. m.	60	1.27	.02	6:35 a. m.	125	2.29	0	1:30 p. m.	15	.48	.04
8:05 a. m.	5	1.28	.12	6:40 a. m.	5	2.31	.24	1:45 p. m.	15	.49	.04
8:20 a. m.	15	1.28	0	6:50 a. m.	10	2.33	.12	2:00 p. m.	15	.53	.16
8:40 a. m.	20	1.30	.06	7:20 a. m.	30	2.33	0	2:15 p. m.	15	.56	.12
9:00 a. m.	20	1.30	0	7:30 a. m.	10	2.37	.24	2:20 p. m.	5	.59	.36
9:20 a. m.	20	1.31	.03	7:40 a. m.	10	2.39	.12	2:25 p. m.	5	.60	.12
9:40 a. m.	20	1.32	.03	7:50 a. m.	10	2.41	.12	2:27 p. m.	2	.63	.90
10:00 a. m.	20	1.34	.06	12:00 m.	250	2.41	0	2:30 p. m.	3	.66	.60
10:20 a. m.	20	1.35	.03	1:00 p. m.	60	2.42	.01	2:45 p. m.	15	.75	.36
10:40 a. m.	20	1.36	.03	2:00 p. m.	60	2.43	.01	3:00 p. m.	15	.80	.20
11:00 a. m.	20	1.37	.03	2:15 p. m.	15	2.44	.04	3:05 p. m.	5	.81	.12
				2:30 p. m. ¹	15	2.45	.04	3:10 p. m.	5	.83	.24
STORM OF JUNE 18-19				STORM OF JULY 8				3:11 p. m.	1	.83	0
June 18:				July 8:				3:15 p. m.	4	.85	.30
7:32 a. m. ²		0	0	5:07 a. m. ²		0	0	3:40 p. m.	25	.85	0
7:40 a. m.	8	.01	.08	5:08 a. m.	1	.04	2.40	3:50 p. m.	10	.86	.06
7:50 a. m.	10	.03	.12	5:09 a. m.	1	.11	4.20	4:00 p. m.	10	.90	.24
8:00 a. m.	10	.05	.12	5:10 a. m.	1	.16	3.00	4:10 p. m.	10	.99	.54
8:10 a. m.	10	.06	.06	5:12 a. m.	2	.23	2.10	4:20 p. m.	10	1.05	.36
8:20 a. m.	10	.08	.12	5:14 a. m.	2	.35	3.60	4:23 p. m.	3	1.07	.40
8:30 a. m.	10	.09	.05	5:15 a. m.	1	.41	3.60	4:25 p. m.	2	1.09	.60
8:40 a. m.	10	.14	.30	5:17 a. m.	1	.53	3.60	4:26 p. m.	1	1.10	.60
8:50 a. m.	10	.20	.36	5:18 a. m.	2	.58	3.00	4:30 p. m.	4	1.12	.30
9:00 a. m.	10	.25	.30	5:20 a. m.	2	.66	2.40	4:35 p. m.	5	1.14	.24
9:10 a. m.	10	.26	.06	7:20 a. m.	120	.66	0	4:39 p. m.	4	1.15	.15
9:20 a. m.	10	.27	.06	7:30 a. m.	10	.67	.06	4:40 p. m.	1	1.17	1.20
9:30 a. m.	10	.30	.18	7:35 a. m.	5	.68	.12	4:43 p. m.	3	1.21	.80
9:40 a. m.	10	.34	.24	7:36 a. m.	1	.73	3.00	4:45 p. m.	2	1.22	.30
9:50 a. m.	10	.37	.18	7:38 a. m.	2	.85	3.60	4:50 p. m.	5	1.23	.12
10:00 a. m.	10	.38	.06	7:40 a. m.	2	.90	1.50	4:55 p. m.	5	1.24	.12
10:10 a. m.	10	.40	.12	7:42 a. m.	2	.92	.60	5:00 p. m.	5	1.26	.24
10:20 a. m.	10	.44	.24	7:44 a. m.	2	.93	.30	5:15 p. m.	15	1.31	.20
10:30 a. m.	10	.46	.12	7:45 a. m.	1	.94	.60	5:30 p. m.	15	1.35	.16
10:40 a. m.	10	.49	.18	7:46 a. m.	1	.98	2.40	5:45 p. m.	15	1.37	.08
10:50 a. m.	10	.53	.24	7:47 a. m.	1	1.07	5.40	5:50 p. m.	5	1.39	.24
11:00 a. m.	10	.60	.42	7:50 a. m.	3	1.20	2.60	5:55 p. m.	5	1.44	.60
11:10 a. m.	10	.74	.84	7:52 a. m.	2	1.33	3.90	6:00 p. m.	5	1.45	.12
11:20 a. m.	10	.85	.66	7:54 a. m.	2	1.40	2.10	6:05 p. m.	5	1.46	.12
11:30 a. m.	10	.93	.48	7:56 a. m.	2	1.51	3.30	6:10 p. m.	5	1.47	.12
11:40 a. m.	10	.98	.30	7:58 a. m.	2	1.57	1.80	6:13 p. m.	3	1.51	.80
11:50 a. m.	10	1.00	.12	8:00 a. m.	2	1.65	2.40	6:15 p. m.	2	1.52	.30
12:00 m.	10	1.02	.12	8:05 a. m.	5	1.68	.36	6:20 p. m.	5	1.53	.12
12:10 p. m.	10	1.04	.12	8:10 a. m.	5	1.71	.36	6:30 p. m.	10	1.56	.18
12:20 p. m.	10	1.05	.06	8:15 a. m.	5	1.73	.24	6:40 p. m.	10	1.58	.12
12:30 p. m.	10	1.14	.54	12:27 p. m.	252	1.73	0	6:50 p. m.	10	1.59	.06
12:40 p. m.	10	1.15	.06	12:29 p. m.	2	1.81	2.40	7:00 p. m.	10	1.59	0
12:50 p. m.	10	1.16	.06	12:30 p. m.	1	1.88	4.20	7:15 p. m.	15	1.60	.04
1:00 p. m.	10	1.16	0	12:31 p. m.	1	1.96	4.80	7:30 p. m.	15	1.61	.04
1:05 p. m.	5	1.18	.24	12:32 p. m.	1	2.02	3.60	9:30 p. m.	120	1.61	0
6:35 p. m.	330	1.18	0	12:34 p. m.	2	2.06	1.20	10:00 p. m.	30	1.62	.02
6:40 p. m.	5	1.19	.12	12:44 p. m.	10	2.06	0	10:30 p. m.	30	1.63	.02
6:50 p. m.	10	1.27	.48	12:46 p. m.	2	2.12	1.80	10:31 p. m.	1	1.63	0
7:00 p. m.	10	1.31	.24	12:48 p. m.	2	2.23	3.30	10:32 p. m.	1	1.64	.60
7:10 p. m.	10	1.33	.12	12:50 p. m.	2	2.32	2.70	10:33 p. m.	1	1.67	1.80
7:20 p. m.	10	1.35	.12	12:52 p. m.	2	2.42	3.00	10:35 p. m.	2	1.72	1.50
7:30 p. m.	10	1.37	.12	1:00 p. m.	8	2.48	.45	10:38 p. m.	3	1.78	1.20
7:52 p. m.	22	1.37	0	1:05 p. m.	5	2.55	.84	10:40 p. m.	2	1.80	.60
7:55 p. m.	3	1.40	.60	1:10 p. m.	5	2.58	.36	10:50 p. m.	10	1.83	.18
9:30 p. m.	95	1.40	0	1:20 p. m. ³	10	2.60	.12	11:00 p. m.	10	1.83	0
9:35 p. m.	5	1.43	.36					12:00 p. m.	60	1.84	.01
9:40 p. m.	5	1.44	.12	STORM OF OCT. 25-27				Oct. 26:			
9:45 p. m.	5	1.45	.12	Oct. 25:				1:00 a. m.	60	1.85	.01
9:50 p. m.	5	1.46	.12	12:16 a. m. ²		0	0	1:23 a. m.	23	1.85	0
9:55 p. m.	5	1.47	.12	12:20 a. m.	4	.11	1.65	1:25 a. m.	2	1.87	.60
10:00 p. m.	5	1.48	.12	12:30 a. m.	10	.12	.06	2:04 a. m.	39	1.87	0
10:05 p. m.	5	1.49	.12	12:40 a. m.	10	.13	.06	2:05 a. m.	1	1.88	.60
10:40 p. m.	35	1.49	0	4:30 a. m.	230	.13	0	2:10 a. m.	5	1.90	.24
10:45 p. m.	5	1.50	.12	5:00 a. m.	30	.15	.04	8:32 a. m.	382	1.90	0
11:25 p. m.	40	1.50	0	5:20 a. m.	20	.15	0	8:33 a. m.	1	1.91	.60
11:30 p. m.	5	1.52	.24	5:25 a. m.	5	.18	.36	8:35 a. m.	2	1.98	2.10
11:40 p. m.	10	1.55	.18	6:30 a. m.	65	.18	0	8:37 a. m.	2	2.07	2.70
11:50 p. m.	10	1.59	.24	6:45 a. m.	15	.21	.12	8:40 a. m.	3	2.31	4.80
12:00 p. m.	10	1.61	.12	7:00 a. m.	15	.22	.04	8:42 a. m.	2	2.43	3.60
June 19:				7:15 a. m.	15	.25	.12	8:45 a. m.	3	2.55	2.40
12:10 a. m.	10	1.67	.36	7:30 a. m.	15	.27	.08	8:46 a. m.	1	2.58	1.80
12:20 a. m.	10	1.74	.42	8:00 a. m.	30	.28	.02	8:50 a. m.	4	2.60	.30
12:30 a. m.	10	1.85	.66	8:30 a. m.	30	.29	.02	9:00 a. m.	10	2.61	.06
12:40 a. m.	10	1.89	.24	9:00 a. m.	30	.29	0	9:10 a. m.	10	2.62	.06
12:50 a. m.	10	1.95	.36	9:15 a. m.	15	.31	.08	11:00 a. m.	110	2.62	0
2:35 a. m.	105	1.95	0	9:30 a. m.	15	.32	.04	11:30 a. m. ³	30	2.63	.02
2:40 a. m.	5	1.96	.12	9:45 a. m.	15	.36	.16	Oct. 27:			
2:45 a. m.	5	1.96	0	10:00 a. m.	15	.39	.12	4:05 a. m. ²		0	0
2:50 a. m.	5	1.98	.24	10:30 a. m.	30	.41	.04	4:10 a. m.	5	.11	1.32
2:55 a. m.	5	2.00	.24	11:00 a. m.	30	.42	.02	4:20 a. m.	10	.19	.48
3:00 a. m.	5	2.14	1.68					4:30 a. m.	10	.25	.36
3:15 a. m.	15	2.14	0					4:40 a. m.	10	.29	.24
3:30 a. m.	15	2.20	.24					4:45 a. m.	5	.35	.72
3:45 a. m.	15	2.24	.16					4:50 a. m.	5	.46	1.32
								4:55 a. m.	5	.57	1.32
								4:57 a. m.	2	.66	2.70

¹ Rain began.² Rain ended.

TABLE 111.—Rainfall at station 103 for selected storms, 1939—Continued

Date and time	Time interval	Accumulated depth	Intensity	Date and time	Time interval	Accumulated depth	Intensity	Date and time	Time interval	Accumulated depth	Intensity
STORM OF OCT. 25-27—Continued				STORM OF OCT. 25-27—Continued				STORM OF OCT. 25-27—Continued			
Oct. 27—Con.	Min.	In.	In. per hr.	Oct. 27—Con.	Min.	In.	In. per hr.	Oct. 27—Con.	Min.	In.	In. per hr.
5:00 a. m.	3	0.71	1.00	7:59 a. m.	4	1.26	0.15	10:30 a. m.	10	1.87	0.06
5:05 a. m.	5	.88	2.04	8:00 a. m.	1	1.28	1.20	10:40 a. m.	10	1.89	.12
5:10 a. m.	5	1.00	1.44	8:05 a. m.	5	1.30	.24	10:50 a. m.	10	1.90	.06
5:11 a. m.	1	1.02	1.20	8:10 a. m.	5	1.31	.12	1:42 p. m.	172	1.90	0
5:15 a. m.	4	1.03	.15	8:20 a. m.	10	1.34	.18	1:45 p. m.	3	2.01	2.20
5:20 a. m.	5	1.06	.36	8:30 a. m.	10	1.42	.48	1:50 p. m.	5	2.05	.48
5:25 a. m.	5	1.08	.24	8:40 a. m.	10	1.44	.12	2:15 p. m.	25	2.05	0
5:30 a. m.	5	1.09	.12	8:50 a. m.	10	1.45	.06	2:30 p. m.	15	2.06	.04
5:35 a. m.	5	1.10	.12	9:00 a. m.	10	1.50	.30	2:45 p. m.	15	2.07	.04
5:40 a. m.	5	1.11	.12	9:26 a. m.	26	1.50	0	3:27 p. m.	42	2.07	0
5:50 a. m.	10	1.12	.06	9:30 a. m.	4	1.58	1.20	3:30 p. m.	3	2.10	.60
6:27 a. m.	37	1.12	0	9:32 a. m.	2	1.61	.90	3:35 p. m.	5	2.11	.12
6:30 a. m.	3	1.14	.40	9:33 a. m.	1	1.65	2.40	3:37 p. m.	2	2.13	.60
6:54 a. m.	24	1.14	0	9:35 a. m.	2	1.69	1.20	4:50 p. m.	73	2.13	0
6:55 a. m.	1	1.15	.60	9:38 a. m.	3	1.76	1.40	4:52 p. m.	2	2.14	.30
7:00 a. m.	5	1.18	.36	9:40 a. m.	2	1.81	1.50	5:08 p. m.	16	2.14	0
7:05 a. m.	5	1.20	.24	9:50 a. m.	10	1.81	0	5:10 p. m.	2	2.15	.30
7:45 a. m.	40	1.20	0	10:00 a. m.	10	1.83	.12	5:15 p. m.	5	2.16	.12
7:50 a. m.	5	1.22	.24	10:10 a. m.	10	1.85	.12	6:00 p. m.	45	2.16	0
7:55 a. m.	5	1.25	.36	10:20 a. m.	10	1.86	.06	7:00 p. m. ³	60	2.18	.02

¹ Rain ended.TABLE 112.—Rainfall at station Y103¹ for selected storms, 1939

Date and time	Time interval	Accumulated depth	Intensity	Date and time	Time interval	Accumulated depth	Intensity	Date and time	Time interval	Accumulated depth	Intensity
STORM OF JUNE 18-19				STORM OF JUNE 18-19—Continued				STORM OF JULY 8—Continued			
June 18:	Min.	In.	In. per hr.	June 18—Con.	Min.	In.	In. per hr.	July 8—Con.	Min.	In.	In. per hr.
7:40 a. m. ¹	-----	0	0	11:15 p. m.	15	2.06	0.04	12:34 p. m.	1	1.89	9.00
7:45 a. m.	5	.03	.36	11:30 p. m.	15	2.07	.04	12:40 p. m.	6	1.96	.70
8:00 a. m.	15	.06	.12	11:45 p. m.	15	2.10	.12	12:50 p. m.	10	2.04	.48
8:15 a. m.	15	.10	.16	12:00 p. m.	15	2.12	.08	1:00 p. m.	10	2.10	.36
8:30 a. m.	15	.12	.08	June 19:				1:10 p. m.	10	2.17	.42
8:45 a. m.	15	.16	.16	12:15 a. m.	15	2.16	.16	1:20 p. m.	10	2.21	.24
8:50 a. m.	5	.19	.36	12:30 a. m.	15	2.22	.24	1:30 p. m.	10	2.23	.12
8:55 a. m.	5	.26	.84	12:45 a. m.	15	2.30	.32	1:40 p. m.	10	2.26	.18
8:56 a. m.	1	.31	3.00	1:00 a. m.	15	2.36	.24	1:50 p. m.	10	2.28	.12
9:00 a. m.	4	.32	.15	1:15 a. m.	15	2.42	.24	2:00 p. m.	10	2.38	.60
9:05 a. m.	5	.33	.12	1:30 a. m.	15	2.46	.16	2:10 p. m.	10	2.54	.96
9:07 a. m.	2	.34	.30	1:45 a. m.	15	2.56	.40	2:14 p. m. ³	4	2.57	.45
9:10 a. m.	3	.39	1.00	2:00 a. m.	15	2.59	.12				
9:15 a. m.	5	.40	.12	2:15 a. m.	15	2.67	.32				
9:30 a. m.	15	.44	.16	2:30 a. m.	15	2.68	.04				
9:45 a. m.	15	.49	.20	2:45 a. m.	15	2.69	.04				
10:00 a. m.	15	.54	.20	3:00 a. m.	15	2.74	.20				
10:15 a. m.	15	.58	.16	3:15 a. m.	15	2.79	.20				
10:30 a. m.	15	.64	.24	3:30 a. m.	15	2.85	.24				
10:45 a. m.	15	.69	.20	3:45 a. m.	15	2.90	.20				
11:00 a. m.	15	.74	.20	4:00 a. m.	15	2.93	.12				
11:15 a. m.	15	.88	.56	4:15 a. m.	15	2.96	.12				
11:30 a. m.	15	1.08	.80	4:30 a. m.	15	2.99	.12				
11:45 a. m.	15	1.22	.56	5:00 a. m.	15	3.00	.04				
12:00 p. m.	15	1.29	.28	6:00 a. m.	60	3.02	.02				
12:15 p. m.	15	1.34	.20	7:30 a. m.	90	3.02	0				
12:30 p. m.	15	1.45	.44	7:45 a. m.	15	3.08	.24				
12:45 p. m.	15	1.51	.24	8:00 a. m.	15	3.12	.16				
2:38 p. m.	113	1.51	0	8:15 a. m.	15	3.14	.08				
2:40 p. m.	2	1.53	.60	8:30 a. m. ³	15	3.17	.12				
2:45 p. m.	5	1.54	.12								
4:45 p. m.	120	1.54	0	STORM OF JULY 8							
4:50 p. m.	5	1.55	.12	July 8:							
4:55 p. m.	5	1.56	.12	5:09 a. m. ¹	-----	0	0				
5:00 p. m.	5	1.57	.12	5:10 a. m.	1	.02	.60				
5:30 p. m.	30	1.57	0	5:13 a. m.	3	.21	3.80				
5:45 p. m.	15	1.58	.04	5:16 a. m.	3	.39	3.60				
6:00 p. m.	15	1.59	.04	5:19 a. m.	3	.53	2.80				
6:15 p. m.	15	1.60	.04	5:20 a. m.	1	.54	.60				
6:30 p. m.	15	1.60	0	7:37 a. m.	137	.54	0				
6:45 p. m.	15	1.61	.04	7:38 a. m.	1	.63	5.40				
7:00 p. m.	15	1.68	.28	7:40 a. m.	2	.70	2.10				
7:15 p. m.	15	1.74	.24	7:49 a. m.	9	.97	1.80				
7:30 p. m.	15	1.78	.16	7:50 a. m.	1	1.01	2.40				
7:45 p. m.	15	1.82	.16	7:52 a. m.	2	1.12	3.30				
8:00 p. m.	15	1.86	.16	7:53 a. m.	1	1.18	3.60				
8:30 p. m.	30	1.87	.02	8:00 a. m.	7	1.31	1.21				
9:00 p. m.	30	1.88	.02	8:05 a. m.	8	1.37	.45				
9:30 p. m.	30	1.89	.02	8:09 a. m.	1	1.39	1.20				
9:40 p. m.	10	1.90	.06	8:10 a. m.	1	1.61	13.20				
9:50 p. m.	10	1.94	.24	8:16 a. m.	6	1.64	.30				
10:00 p. m.	10	1.97	.18	12:27 p. m.	251	1.64	0				
10:10 p. m.	10	2.00	.18	12:30 p. m.	3	1.68	.80				
10:20 p. m.	10	2.02	.12	12:33 p. m.	3	1.74	1.20				
10:30 p. m.	10	2.03	.06								
10:45 p. m.	15	2.04	.04								
11:00 p. m.	15	2.05	.04								

¹ For location of rainfall station see fig. 2.² Rain began.³ Rain ended.

TABLE 112.—Rainfall at station Y103 for selected storms, 1939—Continued

Date and time	Time interval	Accumulated depth	Intensity	Date and time	Time interval	Accumulated depth	Intensity	Date and time	Time interval	Accumulated depth	Intensity
STORM OF OCT. 25-27—Continued				STORM OF OCT. 25-27—Continued				STORM OF OCT. 25-27—Continued			
Oct. 25—Con.	Min.	In.	In. per hr.	Oct. 25—Con.	Min.	In.	In. per hr.	Oct. 27—Con.	Min.	In.	In. per hr.
1:00 p. m.	120	0.53	0	7:00 p. m.	20	1.72	0.03	5:00 a. m.	5	0.48	1.20
1:10 p. m.	10	.55	.12	7:20 p. m.	20	1.72	0	5:05 a. m.	5	.59	1.32
1:20 p. m.	10	.57	.12	7:40 p. m.	20	1.73	.03	5:10 a. m.	5	.67	.96
1:30 p. m.	10	.58	.06	9:30 p. m.	110	1.73	0	5:20 a. m.	10	.71	.24
1:40 p. m.	10	.59	.06	9:40 p. m.	10	1.74	.06	5:30 a. m.	10	.75	.24
1:50 p. m.	10	.60	.06	9:50 p. m.	10	1.76	.12	6:00 a. m.	30	.76	.02
2:00 p. m.	10	.62	.12	10:00 p. m.	10	1.76	0	6:30 a. m.	30	.77	.02
2:10 p. m.	10	.64	.12	10:10 p. m.	10	1.77	.06	7:00 a. m.	30	.82	.10
2:20 p. m.	10	.66	.12	10:20 p. m.	10	1.78	.06	7:30 a. m.	30	.83	.02
2:30 p. m.	10	.69	.18	10:40 p. m.	20	1.78	0	8:00 a. m.	30	.90	.14
2:34 p. m.	4	.70	.15	10:45 p. m.	5	1.82	.48	8:10 a. m.	10	.91	.06
2:40 p. m.	6	.78	.80	10:50 p. m.	5	1.83	.12	8:20 a. m.	10	.93	.12
2:50 p. m.	10	.84	.36	11:00 p. m.	10	1.87	.24	8:30 a. m.	10	1.01	.48
3:00 p. m.	10	.88	.24	11:10 p. m.	10	1.90	.18	8:40 a. m.	10	1.02	.06
3:10 p. m.	10	.92	.24	11:20 p. m.	10	1.92	.12	8:50 a. m.	10	1.03	.06
3:20 p. m.	10	.94	.12	11:40 p. m.	20	1.95	.09	9:00 a. m.	10	1.05	.12
3:30 p. m.	10	.94	0	12:00 p. m.	20	1.98	.09	9:20 a. m.	20	1.05	0
3:40 p. m.	10	.95	.06	Oct. 26:				9:26 a. m.	6	1.06	.10
3:50 p. m.	10	.96	.06	12:20 a. m.	20	2.00	.06	9:30 a. m.	4	1.09	.45
4:00 p. m.	10	.97	.06	12:40 a. m.	20	2.00	0	9:35 a. m.	5	1.17	.96
4:10 p. m.	10	1.03	.36	1:00 a. m.	20	2.02	.06	9:40 a. m.	5	1.26	1.08
4:20 p. m.	10	1.12	.54	1:20 a. m.	20	2.03	.03	9:50 a. m.	10	1.27	.06
4:30 p. m.	10	1.18	.36	1:40 a. m.	20	2.04	.03	10:00 a. m.	10	1.28	.06
4:34 p. m.	4	1.24	.90	2:00 a. m.	20	2.05	.03	10:10 a. m.	10	1.30	.12
4:40 p. m.	6	1.26	.20	2:10 a. m.	10	2.05	0	10:20 a. m.	10	1.31	.06
4:48 p. m.	8	1.29	.23	2:20 a. m.	10	2.07	.06	10:30 a. m.	10	1.33	.12
4:50 p. m.	2	1.32	.90	2:40 a. m.	20	2.10	.09	1:20 p. m.	170	1.33	0
5:00 p. m.	10	1.36	.24	3:00 a. m.	20	2.11	.03	1:30 p. m.	10	1.35	.12
5:10 p. m.	10	1.39	.18	3:20 a. m.	20	2.11	0	1:40 p. m.	10	1.36	.06
5:20 p. m.	10	1.42	.18	3:40 a. m. ⁴	20	2.12	.03	1:45 p. m.	5	1.44	.96
5:30 p. m.	10	1.46	.24	Oct. 27:				1:50 p. m.	5	1.45	.12
5:40 p. m.	10	1.49	.18	4:04 a. m. ²		0	0	1:55 p. m.	5	1.46	.12
5:50 p. m.	10	1.50	.06	4:05 a. m.	1	.01	.60	2:00 p. m.	5	1.47	.12
5:57 p. m.	7	1.51	.08	4:10 a. m.	5	.07	.72	3:20 p. m.	80	1.47	0
6:00 p. m.	3	1.53	.40	4:20 a. m.	10	.11	.24	3:30 p. m.	10	1.50	.18
6:10 p. m.	10	1.60	.42	4:30 a. m.	10	.15	.24	3:40 p. m.	10	1.51	.06
6:17 p. m.	7	1.61	.09	4:40 a. m.	10	.17	.12	4:30 p. m.	50	1.51	0
6:20 p. m.	3	1.63	.40	4:45 a. m.	5	.21	.48	4:40 p. m.	10	1.53	.12
6:22 p. m.	2	1.64	.30	4:50 a. m.	5	.29	.96	5:05 p. m.	25	1.53	0
6:30 p. m.	8	1.67	.22	4:55 a. m.	5	.38	1.08	5:10 p. m. ³	5	1.54	.12
6:40 p. m.	10	1.71	.24								

² Rain began.³ Rain ended.⁴ Record incomplete after 3:40 a. m., total accumulated depth for storm 2.90.TABLE 113.—Rainfall at station 107¹ for selected storms, 1939

Date and time	Time interval	Accumulated depth	Intensity	Date and time	Time interval	Accumulated depth	Intensity	Date and time	Time interval	Accumulated depth	Intensity
STORM OF FEB. 14-15				STORM OF FEB. 14-15—Continued				STORM OF JUNE 18-19—Continued			
Feb. 14:	Min.	In.	In. per hr.	Feb. 15—Con.	Min.	In.	In. per hr.	June 18—Con.	Min.	In.	In. per hr.
8:20 p. m. ²		0	0	4:00 a. m.	10	1.30	0.12	10:45 a. m.	15	0.71	0.24
8:40 p. m.	20	.02	.06	4:20 a. m.	20	1.32	.06	11:00 a. m.	15	.81	.40
9:00 p. m.	20	.04	.06	4:40 a. m.	20	1.33	.03	11:15 a. m.	15	1.08	1.08
9:20 p. m.	20	.06	.06	5:00 a. m.	20	1.34	.03	11:30 a. m.	15	1.26	.72
9:40 p. m.	20	.06	0	5:30 a. m.	30	1.35	.02	11:45 a. m.	15	1.38	.48
10:00 p. m.	20	.08	.06	9:00 a. m.	210	1.35	0	12:00 m.	15	1.43	.20
10:20 p. m.	20	.10	.06	9:30 a. m.	30	1.36	.02	12:05 p. m.	5	1.43	0
10:40 p. m.	20	.13	.09	10:00 a. m. ³	30	1.37	.02	12:10 p. m.	5	1.45	.24
11:00 p. m.	20	.16	.09	STORM OF JUNE 18-19				12:15 p. m.	5	1.48	.36
11:20 p. m.	20	.20	.12	June 18:				12:20 p. m.	5	1.56	.96
11:40 p. m.	20	.24	.12	7:30 a. m. ²		0	0	12:25 p. m.	5	1.60	.48
12:00 p. m.	20	.29	.15	7:45 a. m.	15	.03	.12	12:30 p. m.	5	1.62	.24
Feb. 15:				8:00 a. m.	15	.07	.16	12:35 p. m.	5	1.63	.12
12:20 a. m.	20	.34	.15	8:15 a. m.	15	.11	.16	12:40 p. m.	5	1.64	.12
12:30 a. m.	10	.36	.12	8:30 a. m.	15	.14	.12	2:35 p. m.	115	1.64	0
12:40 a. m.	10	.39	.18	8:35 a. m.	5	.15	.12	2:40 p. m.	5	1.65	.12
12:50 a. m.	10	.44	.30	8:38 a. m.	3	.16	.20	2:45 p. m.	5	1.66	.12
1:00 a. m.	10	.49	.36	8:40 a. m.	2	.19	.90	4:45 p. m.	120	1.66	0
1:10 a. m.	10	.54	.30	8:42 a. m.	2	.22	.90	4:50 p. m.	5	1.67	.12
1:20 a. m.	10	.60	.36	8:45 a. m.	3	.23	.20	4:55 p. m.	5	1.68	.12
1:30 a. m.	10	.66	.36	8:50 a. m.	5	.26	.36	5:40 p. m.	45	1.68	0
1:40 a. m.	10	.73	.42	8:55 a. m.	5	.30	.48	5:45 p. m.	5	1.69	.12
1:50 a. m.	10	.79	.36	9:00 a. m.	5	.33	.36	6:00 p. m.	15	1.70	.04
2:00 a. m.	10	.84	.30	9:04 a. m.	4	.37	.60	6:38 p. m.	38	1.70	0
2:10 a. m.	10	.88	.24	9:05 a. m.	1	.38	.60	6:40 p. m.	2	1.71	.30
2:20 a. m.	10	.94	.36	9:10 a. m.	5	.39	.12	6:45 p. m.	5	1.74	.36
2:30 a. m.	10	1.00	.36	9:15 a. m.	5	.40	.12	6:50 p. m.	5	1.78	.48
2:35 a. m.	5	1.04	.48	9:30 a. m.	15	.44	.16	6:55 p. m.	5	1.81	.36
2:40 a. m.	5	1.08	.48	9:45 a. m.	15	.50	.24	7:00 p. m.	5	1.84	.36
2:50 a. m.	10	1.13	.30	10:00 a. m.	15	.55	.20	7:05 p. m.	5	1.86	.24
3:00 a. m.	10	1.17	.24	10:15 a. m.	15	.59	.16	7:10 p. m.	5	1.87	.12
3:10 a. m.	10	1.19	.12	10:30 a. m.	15	.65	.24	7:15 p. m.	5	1.88	.12
3:20 a. m.	10	1.21	.12					7:20 p. m.	5	1.89	.12
3:30 a. m.	10	1.25	.24					7:25 p. m.	5	1.90	.12
3:40 a. m.	10	1.27	.12					7:28 p. m.	3	1.91	.20
3:50 a. m.	10	1.28	.06					7:30 p. m.	2	1.92	.30

¹ For location of rainfall station see fig. 2.² Rain began.³ Rain ended.

TABLE 113.—Rainfall at station 107 for selected storms, 1939—Continued

Date and time	Time interval	Accumulated depth	Intensity	Date and time	Time interval	Accumulated depth	Intensity	Date and time	Time interval	Accumulated depth	Intensity
STORM OF JUNE 18-19—Continued				STORM OF JULY 8—Continued				STORM OF OCT. 25-27—Continued			
June 18—Con.	Min.	In	In. per hr.	July 8—Con.	Min.	In.	In. per hr.	Oct. 25—Con.	Min.	In	In. per hr.
7:35 p. m.	5	1.92	0	12:55 p. m.	2	2.39	2.10	6:40 p. m.	10	1.67	0.24
7:40 p. m.	5	1.95	.36	12:58 p. m.	3	2.46	1.40	6:50 p. m.	10	1.71	.24
7:50 p. m.	10	1.95	0	1:00 p. m.	2	2.48	.60	7:00 p. m.	10	1.72	.06
8:00 p. m.	10	1.97	.12	1:05 p. m.	5	2.54	.72	7:20 p. m.	20	1.73	.03
9:34 p. m.	94	1.97	0	1:10 p. m.	5	2.60	.72	7:40 p. m.	20	1.74	.03
9:35 p. m.	1	1.98	.60	1:15 p. m.	5	2.62	.24	7:50 p. m.	10	1.75	.06
9:40 p. m.	5	2.01	.36	1:20 p. m.	5	2.64	.24	9:40 p. m.	110	1.75	0
9:45 p. m.	5	2.03	.24	1:50 p. m.	30	2.64	0	10:00 p. m.	20	1.78	.09
10:00 p. m.	15	2.07	.16	2:00 p. m.	10	2.65	.06	10:45 p. m.	45	1.78	0
10:15 p. m.	15	2.09	.08	2:10 p. m.	10	2.66	.06	10:50 p. m.	5	1.88	1.20
10:44 p. m.	29	2.09	0	2:20 p. m. ¹	10	2.67	.06	11:00 p. m.	10	1.91	.18
10:45 p. m.	1	2.10	.60					11:20 p. m.	20	1.93	.06
11:00 p. m.	15	2.11	.04	STORM OF OCT. 25-27				Oct. 26:			
11:15 p. m.	15	2.12	.04	Oct. 25:				1:20 a. m.	120	1.93	0
11:30 p. m.	15	2.14	.08	12:28 a. m. ¹		0	0	1:40 a. m.	20	1.95	.06
11:45 p. m.	15	2.17	.12	12:30 a. m.	2	.02	.60	2:00 a. m.	20	1.95	0
12:00 p. m.	15	2.24	.28	12:31 a. m.	1	.07	3.00	2:20 a. m.	20	1.96	.03
June 19:				12:35 a. m.	4	.11	.60	2:40 a. m.	20	1.98	.06
12:15 a. m.	15	2.36	.48	12:40 a. m.	5	.12	.12	3:45 a. m.	365	1.98	0
12:30 a. m.	15	2.53	.68	4:40 a. m.	240	.12	0	8:50 a. m.	5	2.23	3.00
12:45 a. m.	15	2.62	.36	5:00 a. m.	20	.14	.06	8:55 a. m.	5	2.44	2.52
1:00 a. m.	15	2.64	.08	5:20 a. m.	20	.17	.03	9:00 a. m.	5	2.54	1.20
2:30 a. m.	90	2.64	0	5:40 a. m.	60	.17	0	9:20 a. m.	20	2.56	.06
2:45 a. m.	15	2.70	.24	6:50 a. m.	10	.18	.06	9:40 a. m.	20	2.56	0
3:00 a. m.	15	2.76	.24	7:00 a. m.	10	.19	.06	10:00 a. m.	20	2.57	.03
3:15 a. m.	15	2.82	.24	7:10 a. m.	10	.21	.12	10:20 a. m.	20	2.58	.03
3:30 a. m.	15	2.89	.28	7:20 a. m.	10	.22	.06	10:40 a. m. ²	20	2.59	.03
3:45 a. m.	15	2.93	.16	7:30 a. m.	10	.26	.24	Oct. 27:			
4:00 a. m.	15	2.97	.16	7:40 a. m.	10	.29	.18	3:52 a. m. ²		0	0
4:15 a. m.	15	2.99	.08	8:00 a. m.	20	.29	0	4:00 a. m.	8	.05	.38
4:30 a. m.	15	3.01	.08	8:20 a. m.	20	.32	.09	4:10 a. m.	10	.09	.24
5:00 a. m.	30	3.02	.02	8:40 a. m.	20	.35	.09	4:20 a. m.	10	.12	.18
6:00 a. m.	60	3.04	.02	9:20 a. m.	30	.35	0	4:30 a. m.	10	.21	.54
7:00 a. m.	60	3.05	.01	9:40 a. m.	20	.39	.12	4:40 a. m.	10	.38	1.02
7:15 a. m.	15	3.05	0	9:50 a. m.	10	.41	.12	4:50 a. m.	10	.59	1.26
7:30 a. m.	15	3.08	.12	10:00 a. m.	10	.44	.18	4:55 a. m.	5	.64	.60
7:40 a. m.	10	3.11	.18	10:10 a. m.	10	.46	.12	5:00 a. m.	5	.66	.24
7:50 a. m.	10	3.14	.18	10:20 a. m.	10	.49	.18	5:20 a. m.	20	.71	.15
8:00 a. m.	10	3.15	.06	10:40 a. m.	20	.53	.12	6:00 a. m.	40	.71	0
8:30 a. m.	30	3.16	.02	11:00 a. m.	20	.54	.03	6:20 a. m.	20	.73	.06
9:00 a. m.	30	3.18	.04	1:00 p. m.	120	.54	0	6:40 a. m.	20	.74	.03
9:30 a. m. ¹	30	3.20	.04	1:20 p. m.	20	.58	.12	7:00 a. m.	20	.76	.06
STORM OF JULY 8				1:40 p. m.	20	.59	.03	7:20 a. m.	20	.76	0
July 8:				2:00 p. m.	20	.60	.03	7:40 a. m.	20	.82	.18
5:09 a. m. ²		0	0	2:20 p. m.	20	.65	.15	8:00 a. m.	20	.87	.15
5:10 a. m.	1	.02	1.20	2:30 p. m.	10	.69	.24	8:05 a. m.	5	.88	.12
5:15 a. m.	5	.41	4.68	2:40 p. m.	10	.75	.36	8:15 a. m.	10	.92	.24
5:17 a. m.	2	.53	3.60	2:50 p. m.	10	.81	.36	8:20 a. m.	5	.97	.60
5:20 a. m.	3	.63	2.00	3:00 p. m.	10	.88	.42	8:40 a. m.	20	.98	.03
5:22 a. m.	2	.65	.60	3:10 p. m.	10	.90	.12	8:50 a. m.	20	1.03	.15
7:38 a. m.	136	.65	0	3:20 p. m.	10	.94	.24	9:00 a. m.	5	1.04	.12
7:40 a. m.	2	.71	1.80	3:30 p. m.	10	.96	.12	9:10 a. m.	5	1.10	.72
7:42 a. m.	2	.82	3.30	3:50 p. m.	20	.96	0	9:15 a. m.	5	1.21	1.32
7:45 a. m.	3	.89	1.40	4:00 p. m.	10	.98	.12	9:20 a. m.	5	1.24	.36
7:50 a. m.	5	.90	.12	4:10 p. m.	10	1.01	.18	9:25 a. m.	5	1.26	.24
7:55 a. m.	5	1.19	3.48	4:20 p. m.	10	1.11	.60	9:40 a. m.	15	1.27	.04
8:00 a. m.	5	1.33	1.68	4:30 p. m.	10	1.16	.30	10:00 a. m.	20	1.27	0
8:05 a. m.	5	1.40	.84	4:40 p. m.	10	1.24	.48	10:20 a. m.	20	1.28	.03
8:06 a. m.	1	1.61	12.60	4:50 p. m.	10	1.27	.18	10:40 a. m.	20	1.29	.03
8:10 a. m.	4	1.64	.45	5:00 p. m.	10	1.35	.48	11:00 a. m.	20	1.29	0
8:15 a. m.	5	1.72	.96	5:10 p. m.	10	1.37	.12	11:20 a. m.	20	1.30	.03
8:17 a. m.	2	1.79	2.10	5:20 p. m.	10	1.40	.18	1:25 p. m.	125	1.30	0
8:20 a. m.	3	1.80	.20	5:30 p. m.	10	1.42	.12	1:30 p. m.	5	1.41	1.32
12:30 p. m.	250	1.80	0	5:40 p. m.	10	1.46	.24	1:40 p. m.	10	1.42	.06
12:33 p. m.	3	1.88	1.60	5:50 p. m.	10	1.47	.06	3:00 p. m.	80	1.42	0
12:35 p. m.	2	2.03	3.00	6:00 p. m.	10	1.49	.12	3:20 p. m.	20	1.46	.12
12:38 p. m.	3	2.16	2.60	6:05 p. m.	5	1.50	.12	4:40 p. m.	80	1.46	0
12:40 p. m.	2	2.16	0	6:10 p. m.	5	1.57	.84	5:00 p. m.	20	1.47	.03
12:50 p. m.	10	2.17	.06	6:20 p. m.	10	1.59	.12	6:20 p. m.	80	1.47	0
12:53 p. m.	3	2.32	3.00	6:30 p. m.	10	1.63	.24	6:40 p. m.	20	1.49	.06
								7:00 p. m.	20	1.52	.09
								7:40 p. m.	40	1.52	0
								8:00 p. m. ²	20	1.53	.03

¹ Rain began.² Rain ended.

TABLE 114.—*Rainfall at station 108¹ for selected storms, 1939*

STORM OF FEB. 14-15				STORM FOR JUNE 18-19—Continued				STORM OF JULY 8			
Date and time	Time interval	Accumulated depth	Intensity	Date and time	Time interval	Accumulated depth	Intensity	Date and time	Time interval	Accumulated depth	Intensity
Feb. 14:				June 18—Con.				July 8:			
8:30 p. m. ²		0	0	11:50 a. m.	5	1.22	0.36	5:13 a. m. ²		0	0
8:40 p. m.	10	.01	.06	12:00 m.	10	1.23	.06	5:14 a. m.	1	.08	4.80
8:50 p. m.	10	.02	.06	12:05 p. m.	5	1.27	.48	5:16 a. m.	2	.19	3.30
9:00 p. m.	10	.03	.06	12:10 p. m.	5	1.32	.60	5:18 a. m.	2	.32	3.90
9:20 p. m.	20	.04	.03	12:15 p. m.	5	1.38	.72	5:20 a. m.	2	.43	3.30
9:40 p. m.	20	.04	0	12:20 p. m.	5	1.40	.24	5:25 a. m.	5	.52	1.08
10:00 p. m.	20	.05	.03	12:30 p. m.	10	1.41	.06	7:40 a. m.	135	.52	0
10:20 p. m.	20	.07	.06	2:23 p. m.	153	1.41	0	7:45 a. m.	5	.66	1.63
10:40 p. m.	20	.10	.09	2:25 p. m.	2	1.43	.60	7:48 a. m.	3	.71	1.00
11:00 p. m.	20	.13	.09	4:30 p. m.	125	1.43	0	7:52 a. m.	4	.71	0
11:20 p. m.	20	.16	.09	4:40 p. m.	10	1.45	.12	7:55 a. m.	3	.80	1.80
11:40 p. m.	20	.19	.09	4:50 p. m.	10	1.46	.06	8:00 a. m.	5	1.01	2.52
12:00 p. m.	20	.22	.09	5:20 p. m.	20	1.46	0	8:02 a. m.	2	1.12	3.30
Feb. 15:				5:30 p. m.	10	1.47	.06	8:04 a. m.	2	1.19	2.10
12:20 a. m.	20	.27	.15	5:40 p. m.	10	1.48	.06	8:06 a. m.	2	1.23	1.20
12:30 a. m.	10	.30	.18	6:29 p. m.	49	1.48	T	8:10 a. m.	4	1.27	.60
12:40 a. m.	10	.33	.18	6:30 p. m.	1	1.49	.60	8:15 a. m.	5	1.41	1.68
12:50 a. m.	10	.37	.24	6:35 p. m.	5	1.55	.72	8:18 a. m.	3	1.48	1.40
1:00 a. m.	10	.41	.24	6:40 p. m.	5	1.59	.48	8:20 a. m.	2	1.49	.30
1:10 a. m.	10	.46	.30	6:45 p. m.	5	1.63	.48	12:32 p. m.	252	1.49	0
1:20 a. m.	10	.52	.36	6:50 p. m.	5	1.65	.24	12:35 p. m.	3	1.67	3.60
1:30 a. m.	10	.58	.36	7:00 p. m.	10	1.69	.24	12:38 p. m.	3	1.76	1.80
1:40 a. m.	10	.62	.24	7:10 p. m.	10	1.71	.12	12:40 p. m.	2	1.78	.60
1:50 a. m.	10	.67	.30	7:20 p. m.	10	1.71	T	12:52 p. m.	12	1.78	0
2:00 a. m.	10	.71	.24	7:30 p. m.	10	1.72	.06	12:55 p. m.	3	1.85	1.40
2:10 a. m.	10	.75	.24	7:40 p. m.	10	1.73	.06	1:00 p. m.	5	1.96	1.32
2:20 a. m.	10	.80	.30	7:50 p. m.	10	1.74	.06	1:05 p. m.	5	2.06	1.20
2:30 a. m.	10	.85	.30	8:30 p. m.	40	1.74	0	1:10 p. m.	5	2.13	.84
2:40 a. m.	10	.88	.18	8:50 p. m.	20	1.75	.03	1:15 p. m.	5	2.18	.60
2:50 a. m.	10	.92	.24	9:00 p. m.	10	1.76	.06	1:20 p. m.	5	2.21	.36
3:00 a. m.	10	.96	.24	9:20 p. m.	20	1.76	T	1:25 p. m.	5	2.22	.12
3:10 a. m.	10	.98	.12	9:25 p. m.	5	1.79	.36	1:30 p. m.	5	2.22	0
3:20 a. m.	10	1.00	.12	9:30 p. m.	5	1.81	.24	1:40 p. m.	10	2.23	.06
3:30 a. m.	10	1.02	.12	9:35 p. m.	5	1.82	.12	12:50 p. m.	10	2.23	0
3:40 a. m.	10	1.03	.06	9:40 p. m.	5	1.84	.24	2:00 p. m.	10	2.24	.06
4:00 a. m.	20	1.04	.03	9:50 p. m.	10	1.86	.12	2:10 p. m. ²	10	2.25	.06
4:30 a. m.	30	1.05	.02	10:00 p. m.	10	1.88	.12				
5:00 a. m.	30	1.06	.02	10:10 p. m.	10	1.89	.06				
7:00 a. m.	120	1.06	0	10:20 p. m.	10	1.90	.06				
7:30 a. m.	30	1.07	.02	10:30 p. m.	10	1.90	T				
8:00 a. m.	30	1.08	.02	10:40 p. m.	10	1.91	.06				
9:00 a. m.	60	1.09	.01	10:50 p. m.	10	1.92	.06				
12:40 p. m.	220	1.09	0	11:00 p. m.	10	1.93	.06	Oct. 25:			
12:50 p. m.	10	1.11	.12	11:10 p. m.	10	1.94	.06	12:29 a. m. ²		0	0
1:00 p. m.	10	1.13	.12	11:20 p. m.	10	1.95	.06	12:30 a. m.	1	.04	2.40
1:10 p. m.	10	1.14	.06	11:30 p. m.	10	1.96	.06	12:31 a. m.	1	.07	1.80
1:20 p. m.	10	1.15	.06	11:35 p. m.	5	1.96	T	12:35 a. m.	4	.09	.30
1:30 p. m.	10	1.16	.06	11:40 p. m.	5	2.00	.48	12:40 a. m.	5	.10	.12
				11:50 p. m.	10	2.05	.30	4:40 a. m.	240	.10	0
				11:55 p. m.	5	2.06	.12	4:50 a. m.	10	.11	.06
				12:00 p. m.	5	2.12	.72	5:00 a. m.	10	.13	.12
								5:10 a. m.	10	.14	.06
								5:33 a. m.	23	.14	0
								5:35 a. m.	2	.15	.30
								5:36 a. m.	1	.16	.60
								6:30 a. m.	54	.16	0
								6:45 a. m.	15	.17	.04
								7:00 a. m.	15	.19	.08
								7:15 a. m.	15	.20	.04
								7:20 a. m.	5	.21	.12
								7:25 a. m.	5	.22	.12
								7:28 a. m.	3	.23	.20
								7:30 a. m.	2	.25	.60
								7:35 a. m.	5	.26	.12
								7:40 a. m.	5	.27	.12
								8:00 a. m.	20	.27	0
								8:10 a. m.	10	.28	.06
								8:20 a. m.	10	.29	.06
								8:30 a. m.	10	.31	.12
								9:00 a. m.	30	.31	0
								9:15 a. m.	15	.32	.04
								9:30 a. m.	15	.33	.04
								9:45 a. m.	15	.34	.04
								9:50 a. m.	5	.35	.12
								10:00 a. m.	10	.39	.24
								10:10 a. m.	10	.41	.12
								10:20 a. m.	10	.43	.12
								10:30 a. m.	10	.44	.06
								11:00 a. m.	30	.44	0
								11:30 a. m.	30	.45	.02
								1:06 p. m.	96	.45	0
								1:10 p. m.	4	.46	.15
								1:20 p. m.	10	.49	.18
								1:30 p. m.	10	.50	.06
								1:50 p. m.	20	.50	0
								2:00 p. m.	10	.52	.12
								2:15 p. m.	15	.56	.16
								2:30 p. m.	15	.60	.16
								2:35 p. m.	5	.64	.51
								2:39 p. m.	4	.65	.48
								2:40 p. m.	1	.67	1.02

¹ For location of rainfall station see fig. 2.

² Rain began.

• Rain ended.

TABLE 114.—Rainfall at station 108 for selected storms, 1939—Continued

Date and time	Time interval	Accumulated depth	Intensity	Date and time	Time interval	Accumulated depth	Intensity	Date and time	Time interval	Accumulated depth	Intensity
STORM OF OCT. 25-27—Continued				STORM OF OCT. 25-27—Continued				STORM OF OCT. 25-27—Continued			
Oct. 25—Con.	Min.	In.	In. per hr.	Oct. 26—Con.	Min.	In.	In. per hr.	Oct. 27—Con.	Min.	In.	In. per hr.
2:50 p. m.	10	0.75	0.48	2:15 a. m.	35	1.93	0	6:51 a. m.	21	0.79	0
3:00 p. m.	10	.81	.36	2:19 a. m.	4	1.94	.15	6:52 a. m.	1	.81	1.20
3:10 p. m.	10	.84	.18	2:20 a. m.	1	1.95	.60	6:55 a. m.	3	.82	.20
3:20 p. m.	10	.88	.24	2:25 a. m.	5	1.97	.24	7:00 a. m.	5	.83	.12
3:30 p. m.	10	.89	.06	8:44 a. m.	379	1.97	0	7:10 a. m.	10	.84	.06
3:45 p. m.	15	.90	.04	8:45 a. m.	1	1.98	.60	7:36 a. m.	26	.84	0
4:00 p. m.	15	.91	.04	8:48 a. m.	3	2.07	1.80	7:40 a. m.	4	.85	.15
4:10 p. m.	10	.94	.18	8:50 a. m.	2	2.08	.30	7:45 a. m.	5	.86	.12
4:20 p. m.	10	1.03	.54	8:52 a. m.	2	2.13	1.50	7:50 a. m.	5	.87	.12
4:25 p. m.	5	1.08	.60	8:53 a. m.	1	2.23	6.00	7:55 a. m.	5	.88	.12
4:30 p. m.	5	1.12	.48	8:55 a. m.	2	2.25	.60	8:00 a. m.	5	.91	.36
4:40 p. m.	10	1.19	.42	9:00 a. m.	5	2.36	1.32	8:10 a. m.	10	.92	.06
4:50 p. m.	10	1.22	.18	9:05 a. m.	5	2.43	.84	8:20 a. m.	10	.94	.12
4:52 p. m.	2	1.23	.30	9:10 a. m.	5	2.47	.48	8:25 a. m.	5	.98	.48
4:53 p. m.	1	1.25	1.20	9:15 a. m.	5	2.54	.84	8:30 a. m.	5	.99	.12
4:55 p. m.	2	1.26	.30	9:20 a. m.	5	2.58	.48	8:38 a. m.	8	.99	0
5:00 p. m.	5	1.28	.24	12:30 p. m.	190	2.58	0	8:40 a. m.	2	1.00	.30
5:15 p. m.	15	1.32	.16	1:00 p. m.	30	2.59	.02	8:50 a. m.	10	1.03	.18
5:30 p. m.	15	1.37	.20	1:30 p. m. ³	30	2.60	.02	9:00 a. m.	10	1.06	.18
5:45 p. m.	15	1.42	.20	Oct. 27:				9:22 a. m.	22	1.06	0
6:00 p. m.	15	1.45	.12	4:03 a. m. ²		0	0	9:25 a. m.	3	1.09	.60
6:03 p. m.	3	1.46	.20	4:05 a. m.	2	.09	2.70	9:30 a. m.	5	1.13	.48
6:05 p. m.	2	1.48	.60	4:06 a. m.	1	.11	1.20	9:31 a. m.	1	1.17	2.40
6:06 p. m.	1	1.50	1.20	4:10 a. m.	4	.13	.30	9:34 a. m.	3	1.21	.80
6:10 p. m.	4	1.51	.15	4:20 a. m.	10	.17	.24	9:35 a. m.	1	1.22	.60
6:15 p. m.	5	1.52	.12	4:30 a. m.	10	.20	.18	9:38 a. m.	3	1.23	.20
6:20 p. m.	5	1.53	.12	4:35 a. m.	5	.21	.12	9:40 a. m.	2	1.24	.30
6:23 p. m.	3	1.54	.20	4:40 a. m.	5	.25	.48	10:00 a. m.	20	1.24	0
6:25 p. m.	2	1.56	.60	4:44 a. m.	4	.29	.60	10:10 a. m.	10	1.26	.12
6:30 p. m.	5	1.58	.24	4:45 a. m.	1	.32	1.80	10:25 a. m.	15	1.26	0
6:35 p. m.	5	1.60	.24	4:46 a. m.	1	.35	1.80	10:30 a. m.	5	1.27	.12
6:40 p. m.	5	1.65	.60	4:50 a. m.	4	.40	.75	12:30 p. m.	120	1.27	0
6:50 p. m.	10	1.67	.12	4:52 a. m.	2	.43	.90	1:00 p. m.	30	1.28	.02
7:00 p. m.	10	1.68	.06	4:53 a. m.	1	.46	1.80	1:30 p. m.	30	1.29	.02
7:15 p. m.	15	1.69	.04	4:55 a. m.	2	.48	.60	1:39 p. m.	9	1.29	0
7:30 p. m.	15	1.70	.04	4:56 a. m.	1	.49	.60	1:40 p. m.	1	1.34	3.00
7:45 p. m.	15	1.71	.04	4:58 a. m.	2	.53	1.20	1:41 p. m.	1	1.37	1.80
9:45 p. m.	120	1.71	0	5:00 a. m.	2	.58	1.50	1:45 p. m.	4	1.39	.30
10:00 p. m.	15	1.72	.04	5:01 a. m.	1	.62	2.40	3:25 p. m.	100	1.39	0
10:15 p. m.	15	1.73	.04	5:03 a. m.	2	.66	1.20	3:30 p. m.	5	1.40	.12
10:46 p. m.	31	1.73	0	5:05 a. m.	2	.67	.30	3:35 p. m.	5	1.41	.12
10:50 p. m.	4	1.79	.90	5:06 a. m.	1	.69	1.20	4:05 p. m.	30	1.41	0
10:55 p. m.	5	1.87	.96	5:10 a. m.	4	.71	.30	4:10 p. m.	5	1.42	.12
11:00 p. m.	5	1.89	.24	5:15 a. m.	5	.73	.24	5:05 p. m.	55	1.42	0
11:15 p. m.	15	1.90	.04	5:20 a. m.	5	.74	.12	5:10 p. m.	5	1.43	.12
11:45 p. m.	30	1.90	0	5:25 a. m.	5	.76	.24	5:15 p. m.	5	1.44	.12
12:00 p. m.	15	1.91	.04	5:30 a. m.	5	.77	.12	5:30 p. m.	15	1.44	0
Oct. 26:				5:55 a. m.	25	.77	0	6:00 p. m.	30	1.45	.02
1:30 a. m.	90	1.91	0	6:00 a. m.	5	.78	.12	6:58 p. m.	58	1.45	0
1:35 a. m.	5	1.92	.12	6:15 a. m.	15	.78	0	7:00 p. m.	2	1.46	.30
1:40 a. m.	5	1.93	.12	6:30 a. m.	15	.79	.04	7:10 p. m. ³	10	1.47	.06

² Rain began.³ Rain ended.TABLE 115.—Rainfall at station 109¹ for selected storms, 1939

Date and time	Time interval	Accumulated depth	Intensity	Date and time	Time interval	Accumulated depth	Intensity	Date and time	Time interval	Accumulated depth	Intensity
STORM OF FEB. 14-15				STORM OF FEB. 14-15—Continued				STORM OF JUNE 18-19			
Feb. 14:	Min.	In.	In. per hr.	Feb. 15—Con.	Min.	In.	In. per hr.	June 18:	Min.	In.	In. per hr.
8:30 p. m. ²		0	0	1:50 a. m.	10	0.64	0.30	7:40 a. m. ²		0	0
9:00 p. m.	30	.03	.06	2:00 a. m.	10	.70	.36	7:50 a. m.	10	.04	.24
9:20 p. m.	20	.04	.03	2:10 a. m.	10	.73	.18	8:00 a. m.	10	.06	.12
9:40 p. m.	20	.05	.03	2:20 a. m.	10	.78	.30	8:15 a. m.	15	.12	.16
10:00 p. m.	20	.06	.03	2:30 a. m.	10	.83	.30	8:30 a. m.	15	.12	.08
10:20 p. m.	20	.07	.03	2:40 a. m.	10	.87	.24	8:45 a. m.	15	.16	.16
10:40 p. m.	20	.09	.06	2:50 a. m.	10	.90	.18	8:50 a. m.	5	.19	.36
11:00 p. m.	20	.11	.06	3:00 a. m.	10	.95	.30	8:55 a. m.	5	.28	1.08
11:10 p. m.	10	.13	.12	3:10 a. m.	10	.98	.18	9:00 a. m.	5	.30	.24
11:20 p. m.	10	.15	.12	3:20 a. m.	10	1.00	.12	9:05 a. m.	5	.31	.12
11:30 p. m.	10	.16	.06	3:30 a. m.	10	1.03	.18	9:10 a. m.	5	.36	.60
11:40 p. m.	10	.18	.12	3:40 a. m.	10	1.04	.06	9:15 a. m.	5	.36	.12
11:50 p. m.	10	.20	.12	3:50 a. m.	10	1.05	.06	9:30 a. m.	15	.41	.16
12:00 p. m.	10	.22	.12	4:00 a. m.	10	1.06	.06	9:45 a. m.	15	.46	.20
Feb. 15:				5:00 a. m.	60	1.08	.02	10:00 a. m.	15	.51	.20
12:10 a. m.	10	.24	.12	6:00 a. m.	60	1.09	.01	10:15 a. m.	15	.56	.20
12:20 a. m.	10	.26	.12	7:00 a. m.	60	1.10	.01	10:30 a. m.	15	.62	.24
12:30 a. m.	10	.29	.18	8:00 a. m.	60	1.12	.02	10:45 a. m.	15	.66	.16
12:40 a. m.	10	.31	.12	9:00 a. m.	60	1.13	.01	11:00 a. m.	15	.70	.16
12:50 a. m.	10	.35	.24	10:00 a. m.	60	1.13	0	11:15 a. m.	15	.88	.72
1:00 a. m.	10	.40	.30	10:30 a. m.	30	1.14	.02	11:30 a. m.	15	1.08	.80
1:10 a. m.	10	.44	.24	11:00 a. m.	30	1.15	.02	11:45 a. m.	15	1.17	.36
1:20 a. m.	10	.48	.24	11:30 a. m.	30	1.16	.02	12:00 m.	15	1.24	.28
1:30 a. m.	10	.54	.36	12:00 m.	30	1.17	.02	12:15 p. m.	15	1.29	.20
1:40 a. m.	10	.59	.30	12:30 p. m.	30	1.18	.02	12:30 p. m.	15	1.45	.64
				1:00 p. m. ³	30	1.19	.02	12:45 p. m.	15	1.48	.12

¹ For location of rainfall station see fig. 2.² Rain began.³ Rain ended.

TABLE 115.—Rainfall at station 109 for selected storms, 1939—Continued

Date and time	Time interval	Accumulated depth	Intensity	Date and time	Time interval	Accumulated depth	Intensity	Date and time	Time interval	Accumulated depth	Intensity
STORM OF JUNE 18-19—Continued				STORM OF JULY 8—Continued				STORM OF OCT. 25-27—Continued			
June 18—Con.	Min.	In.	In. per hr.	July 8—Con.	Min.	In.	In. per hr.	Oct. 25—Con.	Min.	In.	In. per hr.
2:35 p. m.	110	1.48	0	1:20 p. m.	5	2.23	0.12	6:50 p. m.	10	1.60	0.06
2:40 p. m.	5	1.50	.24	1:25 p. m.	5	2.24	.12	7:00 p. m.	10	1.61	.06
4:45 p. m.	125	1.50	0	1:30 p. m.	5	2.25	.12	7:15 p. m.	15	1.63	.08
4:50 p. m.	5	1.52	.24	1:35 p. m.	5	2.26	.12	7:30 p. m.	15	1.64	.04
4:55 p. m.	5	1.53	.12	1:40 p. m.	5	2.27	.12	9:50 p. m.	140	1.64	0
5:30 p. m.	35	1.53	0	1:45 p. m.	5	2.28	.12	10:00 p. m.	10	1.65	.06
5:45 p. m.	15	1.54	.04	1:50 p. m. ²	5	2.29	.12	10:45 p. m.	45	1.65	0
6:00 p. m.	15	1.55	.04					10:50 p. m.	5	1.78	1.56
6:42 p. m.	42	1.55	0	STORM OF OCT. 25-27				10:55 p. m.	5	1.82	.48
6:45 p. m.	3	1.60	1.00	Oct. 25:				11:00 p. m.	5	1.83	.12
7:00 p. m.	15	1.70	1.20	12:29 a. m. ²		0	0	11:05 p. m.	5	1.84	.12
7:15 p. m.	15	1.77	.28	12:30 a. m.	1	.04	2.40	11:30 p. m.	25	1.84	0
7:30 p. m.	15	1.79	.08	12:32 a. m.	2	.08	1.20	12:00 p. m.	30	1.85	.02
7:45 p. m.	15	1.80	.04	12:35 a. m.	3	.09	.20	Oct. 26:			
8:15 p. m.	30	1.80	0	1:00 a. m.	25	.09	0	1:05 a. m.	65	1.85	0
9:15 p. m.	60	1.82	.02	1:30 a. m.	30	.10	.02	1:10 a. m.	5	1.88	.36
9:35 p. m.	20	1.82	0	4:00 a. m.	150	.10	0	2:20 a. m.	70	1.88	0
9:40 p. m.	5	1.85	.36	4:30 a. m.	30	.11	.02	2:25 a. m.	5	1.90	.24
9:45 p. m.	5	1.88	.36	5:00 a. m.	30	.12	.02	8:44 a. m.	379	1.90	0
10:00 p. m.	15	1.93	.20	5:30 a. m.	30	.14	.04	8:45 a. m.	1	1.91	.60
10:15 p. m.	15	1.97	.16	5:35 a. m.	5	.14	0	8:47 a. m.	2	1.93	.60
10:30 p. m.	15	1.98	.04	5:40 a. m.	5	.16	.24	8:50 a. m.	3	2.07	2.80
10:45 p. m.	15	1.98	T.	6:40 a. m.	60	.16	0	8:52 a. m.	2	2.17	3.00
11:00 p. m.	15	1.99	.04	6:50 a. m.	10	.17	.06	8:55 a. m.	3	2.39	4.40
11:15 p. m.	15	2.00	.04	7:00 a. m.	10	.18	.06	8:58 a. m.	3	2.50	2.20
11:30 p. m.	15	2.01	.04	7:10 a. m.	10	.19	.06	9:00 a. m.	2	2.53	.90
11:45 p. m.	15	2.06	.20	7:20 a. m.	10	.21	.12	9:05 a. m.	5	2.56	.36
12:00 p. m.	15	2.18	.48	7:25 a. m.	5	.23	.24	9:10 a. m.	5	2.57	.12
June 19:				7:30 a. m.	5	.25	.24	9:15 a. m.	5	2.58	.12
12:15 a. m.	15	2.21	.12	7:40 a. m.	10	.26	.06	11:00 a. m.	105	2.58	0
12:30 a. m.	15	2.33	.48	7:50 a. m.	10	.27	.06	12:00 p. m.	60	2.59	.01
12:45 a. m.	15	2.52	.76	8:10 a. m.	20	.27	0	1:00 p. m. ³	60	2.60	.01
1:00 a. m.	75	2.58	.24	8:20 a. m.	10	.29	.12	Oct. 27:			
2:15 a. m.	15	2.58	0	8:30 a. m.	10	.30	.06	4:03 a. m. ²		0	0
2:30 a. m.	15	2.59	.04	9:00 a. m.	30	.30	0	4:05 a. m.	2	.03	.90
2:45 a. m.	15	2.60	.04	9:15 a. m.	15	.31	.04	4:08 a. m.	3	.09	1.20
3:00 a. m.	15	2.66	.24	9:30 a. m.	15	.33	.08	4:10 a. m.	2	.11	.60
3:15 a. m.	15	2.70	.16	9:45 a. m.	15	.34	.04	4:20 a. m.	10	.14	.18
3:30 a. m.	15	2.78	.32	10:00 a. m.	15	.38	.16	4:30 a. m.	10	.18	.24
3:45 a. m.	15	2.84	.24	10:15 a. m.	15	.41	.12	4:40 a. m.	10	.22	.24
4:00 a. m.	15	2.87	.12	10:30 a. m.	15	.43	.08	4:45 a. m.	5	.27	.60
4:15 a. m.	15	2.90	.12	11:00 a. m.	30	.44	.02	4:47 a. m.	5	.29	.60
4:30 a. m.	15	2.92	.08	1:05 p. m.	125	.44	0	4:48 a. m.	1	.33	2.40
4:45 a. m.	15	2.93	.04	1:10 p. m.	5	.45	.12	4:50 a. m.	2	.36	.90
6:00 a. m.	75	2.93	0	1:20 p. m.	10	.48	.18	4:54 a. m.	4	.41	.75
6:15 a. m.	15	2.95	.08	1:30 p. m.	10	.49	.06	4:55 a. m.	1	.44	1.80
6:30 a. m.	15	2.96	.04	1:40 p. m.	10	.50	.06	4:58 a. m.	3	.47	.60
6:45 a. m.	15	2.97	.04	1:50 p. m.	10	.50	0	5:00 a. m.	2	.52	1.50
7:00 a. m.	15	2.98	.04	2:00 p. m.	10	.51	.06	5:02 a. m.	2	.56	1.20
7:30 a. m.	30	2.98	0	2:10 p. m.	10	.53	.12	5:03 a. m.	1	.60	2.40
7:45 a. m.	15	3.00	.04	2:20 p. m.	10	.55	.12	5:05 a. m.	2	.63	.90
8:00 a. m.	15	3.06	.24	2:30 p. m.	10	.58	.18	5:07 a. m.	2	.65	.60
8:15 a. m.	15	3.09	.12	2:35 p. m.	5	.61	.36	5:10 a. m.	3	.68	.60
8:30 a. m. ³	15	3.10	.04	2:39 p. m.	4	.62	.15	5:15 a. m.	5	.69	.12
STORM OF JULY 8				2:40 p. m.	1	.65	1.80	5:20 a. m.	5	.70	.12
July 8:				2:41 p. m.	1	.65	0	5:30 a. m.	10	.73	.18
5:16 a. m. ²		0	0	2:45 p. m.	4	.69	.60	5:40 a. m.	10	.74	.06
5:18 a. m.	2	.10	3.00	2:50 p. m.	5	.72	.36	5:40 a. m.	20	.74	0
5:20 a. m.	2	.23	3.90	2:55 p. m.	5	.76	.48	6:00 a. m.	30	.75	.02
5:23 a. m.	3	.35	2.40	3:00 p. m.	5	.77	.12	6:53 a. m.	23	.75	0
5:25 a. m.	2	.40	1.50	3:15 p. m.	15	.83	.24	6:55 a. m.	2	.78	.90
5:27 a. m.	2	.44	1.20	3:30 p. m.	15	.85	.08	6:57 a. m.	2	.78	0
5:30 a. m.	3	.45	.20	3:50 p. m.	20	.85	0	7:00 a. m.	3	.79	.20
7:42 a. m.	132	.45	0	4:00 p. m.	10	.87	.12	7:05 a. m.	5	.80	.12
7:45 a. m.	3	.56	2.20	4:10 p. m.	10	.90	.18	7:38 a. m.	33	.80	0
7:50 a. m.	5	.65	1.08	4:20 p. m.	10	.99	.54	7:40 a. m.	2	.81	.30
7:53 a. m.	3	.66	.20	4:30 p. m.	10	1.07	.48	7:45 a. m.	5	.81	0
7:55 a. m.	2	.72	1.80	4:40 p. m.	10	1.14	.42	7:50 a. m.	5	.82	.12
8:00 a. m.	5	.95	2.76	4:50 p. m.	10	1.18	.24	7:52 a. m.	2	.83	.30
8:01 a. m.	1	1.04	5.40	5:00 p. m.	10	1.24	.36	7:55 a. m.	3	.84	.20
8:05 a. m.	4	1.24	3.00	5:15 p. m.	15	1.27	.12	8:00 a. m.	5	.87	.36
8:10 a. m.	5	1.34	1.20	5:30 p. m.	15	1.32	.20	8:05 a. m.	5	.88	.12
8:12 a. m.	2	1.36	.60	5:45 p. m.	15	1.37	.20	8:17 a. m.	12	.88	0
8:15 a. m.	3	1.40	.80	6:00 p. m.	15	1.39	.08	8:20 a. m.	3	.89	.20
8:20 a. m.	5	1.48	.96	6:04 p. m.	4	1.40	.15	8:25 a. m.	5	.92	.36
12:36 p. m.	256	1.48	0	6:05 p. m.	1	1.42	1.20	8:30 a. m.	5	.94	.24
12:38 p. m.	2	1.62	4.20	6:06 p. m.	1	1.44	1.20	8:40 a. m.	10	.95	.06
12:40 p. m.	2	1.76	4.20	6:10 p. m.	4	1.46	.30	8:50 a. m.	10	.97	.12
12:42 p. m.	2	1.80	1.20	6:15 p. m.	5	1.47	.12	9:00 a. m.	10	1.01	.24
12:53 p. m.	11	1.80	0	6:20 p. m.	5	1.48	.12	9:24 a. m.	24	1.01	0
12:55 p. m.	2	1.89	2.70	6:23 p. m.	3	1.48	0	9:25 a. m.	1	1.03	1.20
1:00 p. m.	5	2.09	2.40	6:25 p. m.	2	1.50	.60	9:30 a. m.	5	1.06	.36
1:05 p. m.	5	2.14	.60	6:30 p. m.	5	1.52	.24	9:31 a. m.	1	1.07	.60
1:10 p. m.	5	2.19	.60	6:35 p. m.	5	1.54	.24	9:32 a. m.	1	1.11	2.40
1:15 p. m.	5	2.22	.36	6:40 p. m.	5	1.59	.60	9:34 a. m.	2	1.13	.60
								9:35 a. m.	1	1.14	.60
								9:38 a. m.	3	1.15	.20

² Rain began.³ Rain ended.

TABLE 115.—Rainfall at station 109 for selected storms, 1939—Continued

Date and time	Time interval	Accumulated depth	Intensity	Date and time	Time interval	Accumulated depth	Intensity	Date and time	Time interval	Accumulated depth	Intensity
STORM OF OCT. 25-27—Continued				STORM OF OCT. 25-27—Continued				STORM OF OCT. 25-27—Continued			
Oct. 27—Con.	Min.	In.	In. per hr.	Oct. 27—Con.	Min.	In.	In. per hr.	Oct. 27—Con.	Min.	In.	In. per hr.
9:40 a. m.	2	1.16	0.30	11:00 a. m.	30	1.22	0.04	3:26 p. m.	91	1.35	0
9:50 a. m.	10	1.16	0	11:30 a. m.	30	1.23	.02	3:30 p. m.	4	1.36	.15
9:55 a. m.	5	1.17	.12	12:00 m.	30	1.24	.02	3:35 p. m.	5	1.37	.12
10:02 a. m.	7	1.17	0	1:40 p. m.	100	1.24	0	5:06 p. m.	91	1.37	0
10:05 a. m.	3	1.18	.20	1:42 p. m.	2	1.32	2.40	5:10 p. m.	4	1.38	.15
10:10 a. m.	5	1.19	.12	1:45 p. m.	3	1.34	.40	5:15 p. m.	5	1.39	.12
10:28 a. m.	18	1.19	0	1:50 p. m.	5	1.34	0	5:30 p. m.	15	1.39	0
10:30 a. m.	2	1.20	.30	1:55 p. m.	5	1.35	.12	6:00 p. m. ³	30	1.40	.02

³ Rain ended.TABLE 116.—Rainfall at station 110¹ for selected storms, 1939

Date and time	Time interval	Accumulated depth	Intensity	Date and time	Time interval	Accumulated depth	Intensity	Date and time	Time interval	Accumulated depth	Intensity
STORM OF FEB. 14-15				STORM OF JUNE 18-19—Continued				STORM OF JUNE 18-19—Continued			
Feb. 14:	Min.	In.	In. per hr.	June 18—Con.	Min.	In.	In. per hr.	June 18—Con.	Min.	In.	In. per hr.
9:45 p. m. ³		0	0	8:58 a. m.	3	0.36	0.40	11:10 p. m.	30	2.32	0
10:00 p. m.	15	.02	.08	9:00 a. m.	2	.40	1.20	11:20 p. m.	10	2.33	.06
10:20 p. m.	20	.04	.06	9:10 a. m.	10	.42	.12	11:30 p. m.	10	2.34	.06
10:40 p. m.	20	.07	.09	9:20 a. m.	10	.45	.18	11:35 p. m.	5	2.40	.72
11:00 p. m.	20	.09	.06	9:30 a. m.	10	.50	.30	11:40 p. m.	5	2.42	.24
11:10 p. m.	11	.11	.12	9:40 a. m.	10	.54	.24	11:45 p. m.	5	2.45	.36
11:20 p. m.	10	.13	.12	9:50 a. m.	10	.57	.18	11:50 p. m.	5	2.48	.36
11:40 p. m.	20	.16	.09	10:00 a. m.	10	.62	.30	12:00 p. m.	10	2.51	.18
11:50 p. m.	10	.17	.06	10:10 a. m.	10	.64	.12	June 19:			
12:00 p. m.	10	.20	.18	10:20 a. m.	10	.69	.30	12:05 a. m.	5	2.58	.84
Feb. 15:				10:30 a. m.	10	.72	.18	12:10 a. m.	5	2.59	.12
12:10 a. m.	10	.22	.12	10:40 a. m.	10	.75	.18	12:20 a. m.	10	2.61	.12
12:20 a. m.	10	.24	.12	10:50 a. m.	10	.77	.12	12:25 a. m.	5	2.71	1.20
12:30 a. m.	10	.27	.18	10:53 a. m.	3	.80	.60	12:30 a. m.	5	2.75	.48
12:40 a. m.	10	.30	.18	10:55 a. m.	2	.82	.60	12:35 a. m.	5	2.80	.60
12:50 a. m.	10	.34	.24	10:57 a. m.	2	.84	.60	12:40 a. m.	5	2.82	.24
12:55 a. m.	5	.37	.36	10:59 a. m.	2	.87	.90	12:50 a. m.	10	2.84	.12
1:00 a. m.	5	.39	.24	11:00 a. m.	1	.89	1.20	1:10 a. m.	20	2.85	.03
1:10 a. m.	10	.43	.24	11:03 a. m.	3	.93	.80	1:30 a. m.	20	2.86	.03
1:20 a. m.	10	.48	.30	11:05 a. m.	2	1.00	2.10	2:36 a. m.	66	2.86	0
1:30 a. m.	10	.53	.30	11:10 a. m.	5	1.05	.60	2:40 a. m.	4	2.88	.30
1:40 a. m.	10	.58	.30	11:15 a. m.	5	1.13	.96	2:50 a. m.	10	2.92	.24
1:50 a. m.	10	.63	.30	11:20 a. m.	5	1.20	.84	3:00 a. m.	10	2.94	.12
2:00 a. m.	10	.66	.18	11:30 a. m.	10	1.32	.72	3:10 a. m.	10	2.97	.18
2:10 a. m.	10	.71	.30	11:40 a. m.	10	1.36	.24	3:20 a. m.	10	3.02	.30
2:20 a. m.	10	.76	.30	11:50 a. m.	10	1.42	.36	3:30 a. m.	10	3.05	.18
2:30 a. m.	10	.81	.30	12:00 m.	10	1.45	.18	3:40 a. m.	10	3.06	.06
2:40 a. m.	10	.85	.24	12:05 p. m.	5	1.46	.12	3:50 a. m.	10	3.08	.12
2:50 a. m.	10	.91	.36	12:10 p. m.	5	1.52	.72	4:00 a. m.	10	3.11	.18
3:00 a. m.	10	.94	.18	12:15 p. m.	5	1.57	.60	4:10 a. m.	10	3.11	T
3:10 a. m.	10	.98	.24	12:20 p. m.	5	1.66	1.08	4:20 a. m.	10	3.13	.12
3:20 a. m.	10	1.00	.12	12:30 p. m.	10	1.71	.30	6:38 a. m.	138	3.13	T
3:30 a. m.	10	1.02	.12	12:40 p. m.	10	1.72	.06	6:40 a. m.	2	3.14	.30
3:40 a. m.	10	1.05	.18	2:28 p. m.	108	1.72	0	6:50 a. m.	10	3.15	.06
3:50 a. m.	10	1.06	.06	2:30 p. m.	2	1.73	.30	7:20 a. m.	30	3.16	.02
4:00 a. m.	10	1.07	.06	2:35 p. m.	5	1.73	T	7:30 a. m.	10	3.17	.06
4:20 a. m.	20	1.10	.09	2:40 p. m.	5	1.74	.12	7:40 a. m.	10	3.20	.18
4:40 a. m.	20	1.10	T	4:35 p. m.	115	1.74	0	7:50 a. m.	10	3.22	.12
5:00 a. m.	20	1.11	.03	4:40 p. m.	5	1.75	.12	8:00 a. m.	10	3.23	.06
5:20 a. m.	20	1.11	T	4:50 p. m.	10	1.77	.12	8:10 a. m. ³	10	3.24	.06
5:40 a. m.	20	1.12	.03	5:30 p. m.	40	1.77	0	STORM OF JULY 8			
8:00 a. m.	140	1.13	T	5:40 p. m.	10	1.78	.06	[Record missing]			
12:30 p. m.	270	1.14	T	5:50 p. m.	10	1.80	.12	STORM OF OCT. 25-27			
12:40 p. m.	10	1.15	.06	6:30 p. m.	40	1.80	0	Oct. 25:			
12:50 p. m.	10	1.15	T	6:35 p. m.	5	1.83	.36	12:29 a. m. ²		0	0
1:00 p. m.	10	1.17	.12	6:40 p. m.	5	1.90	.84	12:30 a. m.	1	.02	1.20
1:10 p. m.	10	1.19	.12	6:45 p. m.	5	1.94	.48	12:32 a. m.	2	.09	2.10
1:20 p. m.	10	1.21	.12	6:47 p. m.	2	1.97	.90	12:35 a. m.	3	.10	.20
1:30 p. m. ³	10	1.22	.06	6:50 p. m.	3	1.99	.40	12:40 a. m.	5	.10	0
STORM OF JUNE 18-19				6:55 p. m.	5	2.02	.36	12:45 a. m.	5	.11	.12
June 18:				7:00 p. m.	5	2.04	.24	3:00 a. m.	135	.11	0
7:27 a. m. ²		0	0	7:10 p. m.	10	2.07	.18	4:00 a. m.	60	.12	.01
7:30 a. m.	3	.01	.10	7:20 p. m.	10	2.09	.12	5:00 a. m.	60	.13	.01
7:40 a. m.	10	.05	.24	7:30 p. m.	10	2.10	.06	5:15 a. m.	15	.15	.08
7:50 a. m.	10	.07	.12	7:40 p. m.	10	2.11	.06	5:30 a. m.	15	.16	.04
8:00 a. m.	10	.11	.24	7:50 p. m.	10	2.11	T	5:35 a. m.	5	.16	0
8:10 a. m.	10	.13	.12	8:00 p. m.	10	2.12	.06	5:40 a. m.	5	.17	.12
8:20 a. m.	10	.15	.12	8:10 p. m.	10	2.12	T	5:45 a. m.	5	.17	0
8:30 a. m.	10	.17	.12	8:20 p. m.	10	2.13	.06	6:30 a. m.	50	.17	.04
8:40 a. m.	10	.22	.30	9:25 p. m.	65	2.13	0	6:45 a. m.	15	.20	.08
8:45 a. m.	5	.24	.24	9:30 p. m.	5	2.15	.24	7:00 a. m.	15	.21	.04
8:47 a. m.	2	.31	2.10	9:40 p. m.	10	2.21	.36	7:15 a. m.	15	.25	.16
8:50 a. m.	3	.33	.40	9:50 p. m.	10	2.25	.24	7:30 a. m.	15	.27	.24
8:55 a. m.	5	.34	.12	10:00 p. m.	10	2.29	.24	7:35 a. m.	5		
				10:10 p. m.	10	2.30	.06				
				10:20 p. m.	10	2.30	T				
				10:30 p. m.	10	2.31	.06				
				10:40 p. m.	10	2.32	.06				

¹ For location of rainfall station see fig. 2.² Rain began.³ Rain ended.

TABLE 116.—Rainfall at station 110 for selected storms, 1939—Continued

Date and time	Time interval	Accumulated depth	Intensity	Date and time	Time interval	Accumulated depth	Intensity	Date and time	Time interval	Accumulated depth	Intensity
STORM OF OCT. 25-27—Continued				STORM OF OCT. 25-27—Continued				STORM OF OCT. 25-27—Continued			
Oct. 25—Con.	Min.	In.	In. per hr.	Oct. 25—Con.	Min.	In.	In. per hr.	Oct. 27—Con.	Min.	In.	In. per hr.
7:40 a. m.	5	0.27	0	6:45 p. m.	5	1.56	0.24	5:00 a. m.	3	0.56	1.20
7:45 a. m.	5	.28	.12	7:00 p. m.	15	1.57	.04	5:04 a. m.	4	.67	1.65
8:00 a. m.	15	.29	.04	7:15 p. m.	15	1.58	.04	5:05 a. m.	1	.68	.60
8:15 a. m.	15	.29	0	7:30 p. m.	15	1.60	.08	5:06 a. m.	1	.69	.60
8:30 a. m.	15	.31	.08	10:00 p. m.	150	1.60	0	5:08 a. m.	2	.72	.90
8:50 a. m.	20	.31	0	10:10 p. m.	10	1.61	.06	5:10 a. m.	2	.73	.30
9:00 a. m.	10	.32	.06	10:47 p. m.	37	1.61	0	5:20 a. m.	10	.76	.18
9:15 a. m.	15	.32	0	10:50 p. m.	3	1.72	2.20	5:30 a. m.	10	.79	.18
9:30 a. m.	15	.34	.08	10:55 p. m.	5	1.77	.60	6:00 a. m.	30	.80	.02
9:45 a. m.	15	.35	.04	11:00 p. m.	5	1.78	.12	7:30 a. m.	30	.81	.02
10:00 a. m.	15	.38	.12	11:15 p. m.	15	1.80	.08	7:53 a. m.	23	.81	0
10:15 a. m.	15	.41	.12	Oct. 26:				7:55 a. m.	2	.83	.60
10:30 a. m.	15	.43	.08	1:20 a. m.	125	1.80	0	7:58 a. m.	3	.84	.20
10:45 a. m.	15	.44	.04	1:30 a. m.	10	1.81	.06	7:00 a. m.	2	.85	.30
12:00 m.	75	.44	0	1:37 a. m.	7	1.81	0	7:30 a. m.	30	.85	0
1:00 p. m.	60	.45	.01	1:40 a. m.	3	1.82	.20	7:40 a. m.	10	.86	.06
1:08 p. m.	8	.45	0	2:20 a. m.	40	1.82	0	7:50 a. m.	10	.87	.06
1:10 p. m.	2	.46	.30	2:24 a. m.	4	1.84	.30	8:00 a. m.	10	.92	.30
1:20 p. m.	10	.48	.12	8:46 a. m.	382	1.84	0	8:10 a. m.	10	.92	0
1:30 p. m.	10	.50	.12	8:50 a. m.	4	1.90	.90	8:15 a. m.	5	.93	.12
2:00 p. m.	30	.50	0	8:55 a. m.	5	2.01	1.32	8:20 a. m.	5	.94	.12
2:10 p. m.	10	.53	.18	9:00 a. m.	5	2.07	.72	8:23 a. m.	3	.96	.40
2:20 p. m.	10	.55	.12	9:05 a. m.	5	2.12	.60	8:25 a. m.	2	.97	.30
2:30 p. m.	10	.57	.12	9:10 a. m.	5	2.16	.48	8:30 a. m.	5	.98	.12
2:40 p. m.	10	.62	.30	9:15 a. m.	5	2.18	.24	8:40 a. m.	10	.99	.06
2:41 p. m.	1	.64	1.20	9:20 a. m.	5	2.20	.24	8:50 a. m.	10	1.02	.18
2:45 p. m.	4	.67	.45	9:30 a. m.	10	2.23	.18	9:00 a. m.	10	1.05	.18
2:50 p. m.	5	.71	.48	9:40 a. m.	10	2.25	.12	9:20 a. m.	20	1.05	0
3:00 p. m.	10	.78	.42	9:50 a. m.	10	2.26	.06	9:24 a. m.	4	1.06	.15
3:10 p. m.	10	.81	.18	10:00 a. m.	10	2.27	.06	9:25 a. m.	1	1.08	1.20
3:20 p. m.	10	.84	.18	10:10 a. m.	10	2.28	.06	9:30 a. m.	5	1.11	.36
3:30 p. m.	10	.85	.06	10:30 a. m.	20	2.28	0	9:35 a. m.	5	1.21	1.20
3:50 p. m.	20	.85	0	10:35 a. m.	5	2.29	.12	9:37 a. m.	2	1.22	.30
4:00 p. m.	10	.86	.06	11:00 a. m.	25	2.29	0	9:38 a. m.	1	1.23	.60
4:10 p. m.	10	.89	.18	11:15 a. m.	15	2.30	.04	10:00 a. m.	22	1.23	0
4:20 p. m.	10	.97	.48	11:30 a. m.	15	2.31	.04	10:15 a. m.	15	1.25	.08
4:30 p. m.	10	1.05	.48	12:00 p. m.	30	2.32	.02	10:30 a. m.	15	1.26	.04
4:45 p. m.	15	1.14	.36	12:30 p. m.	30	2.33	.02	11:00 a. m.	30	1.26	0
5:00 p. m.	15	1.21	.28	1:00 p. m. ³	30	2.34	.02	12:00 m.	60	1.27	.01
5:15 p. m.	15	1.25	.16	Oct. 27:				12:16 p. m.	16	1.27	0
5:30 p. m.	15	1.29	.16	4:02 a. m. ²		0	0	12:17 p. m.	1	1.30	1.80
5:45 p. m.	15	1.34	.20	4:05 a. m.	3	.05	1.00	1:00 p. m.	43	1.30	0
6:00 p. m.	15	1.36	.08	4:07 a. m.	2	.11	1.80	1:30 p. m.	30	1.31	.02
6:05 p. m.	5	1.37	.12	4:10 a. m.	3	.13	.40	1:41 p. m.	11	1.31	0
6:07 p. m.	2	1.40	.90	4:20 a. m.	10	.17	.24	1:43 p. m.	2	1.36	1.0
6:10 p. m.	3	1.41	.20	4:30 a. m.	10	.21	.24	1:45 p. m.	2	1.37	.30
6:15 p. m.	5	1.42	.12	4:35 a. m.	5	.22	.12	1:50 p. m.	5	1.37	0
6:20 p. m.	5	1.42	0	4:40 a. m.	5	.25	.36	1:55 p. m.	5	1.38	.12
6:24 p. m.	4	1.43	.15	4:45 a. m.	5	.30	.60	3:30 p. m.	95	1.38	0
6:25 p. m.	1	1.44	.60	4:47 a. m.	2	.37	2.10	3:35 p. m.	5	1.39	.12
6:30 p. m.	5	1.46	.24	4:50 a. m.	3	.41	.80	4:35 p. m.	60	1.39	0
6:33 p. m.	3	1.47	.20	4:53 a. m.	3	.45	.80	4:40 p. m.	5	1.40	.12
6:35 p. m.	2	1.49	.60	4:54 a. m.	1	.48	1.80	5:06 p. m.	26	1.40	0
6:37 p. m.	2	1.50	.30	4:55 a. m.	1	.49	.60	5:10 p. m. ³	4	1.42	.30
6:40 p. m.	3	1.54	.80	4:57 a. m.	2	.50	.30				

² Rain began.³ Rain ended.TABLE 117.—Rainfall at station 113¹ for selected storms, 1939

Date and time	Time interval	Accumulated depth	Intensity	Date and time	Time interval	Accumulated depth	Intensity	Date and time	Time interval	Accumulated Depth	Intensity
STORM OF FEB. 14-15				STORM OF FEB. 14-15—Continued				STORM OF JUNE 18-19			
Feb. 14:	Min.	In.	In. per hr.	Feb. 15—Con.	Min.	In.	In. per hr.	June 18:	Min.	In.	In. per hr.
8:30 p. m. ²		0	0	2:10 a. m.	10	0.71	0.24	7:30 a. m. ²		0	0
9:00 p. m.	30	.02	.04	2:20 a. m.	10	.75	.24	7:50 a. m.	20	.01	.03
9:30 p. m.	30	.03	.02	2:30 a. m.	10	.80	.30	8:00 a. m.	10	.02	.06
10:00 p. m.	30	.04	.02	2:40 a. m.	10	.85	.30	8:10 a. m.	10	.04	.12
10:20 p. m.	20	.05	.03	2:50 a. m.	10	.90	.30	8:20 a. m.	10	.08	.24
10:40 p. m.	20	.07	.06	3:00 a. m.	10	.94	.24	8:30 a. m.	10	.10	.12
11:00 p. m.	20	.10	.09	3:10 a. m.	10	.97	.18	8:40 a. m.	10	.12	.12
11:20 p. m.	20	.13	.09	3:20 a. m.	10	.99	.12	8:50 a. m.	10	.16	.24
11:40 p. m.	20	.16	.09	3:30 a. m.	10	1.03	.24	9:00 a. m.	10	.20	.24
12:00 p. m.	20	.20	.12	3:40 a. m.	10	1.06	.18	9:10 a. m.	10	.26	.36
Feb. 15:				4:00 a. m.	20	1.08	.06	9:20 a. m.	10	.28	.12
12:20 a. m.	20	.24	.12	5:00 a. m.	60	1.10	.02	9:30 a. m.	10	.30	.12
12:40 a. m.	20	.29	.15	6:00 a. m.	60	1.11	.01	9:40 a. m.	10	.34	.24
12:50 a. m.	10	.33	.24	7:00 a. m.	60	1.13	.02	9:50 a. m.	10	.37	.18
1:00 a. m.	10	.37	.24	8:00 a. m.	60	1.14	.01	10:00 a. m.	10	.40	.18
1:10 a. m.	10	.41	.24	8:10 a. m.	10	1.15	.06	10:10 a. m.	10	.43	.18
1:20 a. m.	10	.47	.36	12:30 p. m.	260	1.15	0	10:20 a. m.	10	.46	.18
1:30 a. m.	10	.53	.36	12:40 p. m.	10	1.16	.06	10:30 a. m.	10	.48	.12
1:40 a. m.	10	.58	.30	12:50 p. m.	10	1.17	.06	10:40 a. m.	10	.52	.24
1:50 a. m.	10	.63	.30	1:00 p. m. ³	10	1.18	.06	10:50 a. m.	10	.54	.12
2:00 a. m.	10	.67	.24					11:00 a. m.	10	.61	.42

¹For location of rainfall station see fig. 2.² Rain began.

Rain ended.

TABLE 117.—Rainfall at station 113 for selected storms, 1939—Continued

Date and time	Time interval	Accumulated depth	Intensity	Date and time	Time interval	Accumulated depth	Intensity	Date and time	Time interval	Accumulated depth	Intensity
STORM OF JUNE 18-19—Continued				STORM OF OCT. 25-27—Continued				STORM OF OCT. 25-27—Continued			
June 18—Con.	Min.	In.	In. per hr.	Oct. 25—Con.	Min.	In.	In. per hr.	Oct. 26—Con.	Min.	In.	In. per hr.
11:10 a. m.	10	0.71	0.60	9:40 a. m.	3	0.39	0.40	12:30 p. m.	210	2.43	0
11:20 a. m.	10	.90	1.14	9:50 a. m.	10	.41	.12	1:00 p. m. ³	30	2.44	.02
11:30 a. m.	10	1.00	.60	10:00 a. m.	10	.43	.12	Oct. 27:			
11:40 a. m.	10	1.10	.60	10:10 a. m.	10	.45	.12	3:52 a. m. ²		0	0
11:50 a. m.	10	1.18	.48	10:20 a. m.	10	.46	.06	3:55 a. m.	3	.06	1.20
12:00 p. m.	10	1.19	.06	10:45 a. m.	25	.46	0	3:58 a. m.	3	.11	1.00
12:10 p. m.	10	1.20	.06	11:00 a. m.	15	.47	.04	4:00 a. m.	2	.12	.30
12:20 p. m.	10	1.23	.18	12:52 p. m.	112	.47	0	4:10 a. m.	10	.18	.36
12:30 p. m.	10	1.28	.30	12:55 p. m.	3	.48	.20	4:20 a. m.	10	.21	.18
12:40 p. m.	10	1.32	.24	1:00 p. m.	5	.49	.12	4:25 a. m.	5	.22	.12
12:50 p. m.	10	1.33	.06	1:10 p. m.	10	.51	.12	4:29 a. m.	4	.24	.30
1:00 p. m.	10	1.35	.12	1:20 p. m.	10	.53	.12	4:30 a. m.	1	.25	.60
1:10 p. m.	10	1.36	.06	1:40 p. m.	20	.53	0	4:35 a. m.	5	.32	.84
1:20 p. m.	10	1.38	.12	1:50 p. m.	10	.56	.18	4:36 a. m.	1	.34	1.20
2:40 p. m.	80	1.38	0	2:00 p. m.	10	.58	.12	4:38 a. m.	2	.39	1.50
2:50 p. m.	10	1.39	.06	2:10 p. m.	10	.60	.12	4:40 a. m.	2	.43	1.20
3:00 p. m.	10	1.39	0	2:20 p. m.	10	.64	.24	4:43 a. m.	3	.46	.60
4:00 p. m.	60	1.40	.01	2:24 p. m.	4	.66	.30	4:44 a. m.	1	.51	3.00
5:00 p. m.	60	1.41	.01	2:25 p. m.	1	.68	1.20	4:45 a. m.	1	.52	.60
6:00 p. m.	60	1.42	.01	2:30 p. m.	5	.72	.48	4:48 a. m.	3	.54	.40
6:30 p. m.	30	1.43	.02	2:32 p. m.	2	.75	.90	4:50 a. m.	2	.58	1.20
6:45 p. m.	15	1.43	0	2:35 p. m.	3	.76	.26	4:54 a. m.	4	.70	1.80
7:00 p. m.	15	1.52	.36	2:40 p. m.	5	.81	.60	4:55 a. m.	1	.71	.60
7:15 p. m.	15	1.58	.24	2:50 p. m.	10	.85	.24	4:56 a. m.	1	.72	.60
7:30 p. m.	15	1.62	.16	3:00 p. m.	10	.88	.18	4:58 a. m.	2	.75	.90
7:45 p. m.	15	1.64	.08	3:10 p. m.	10	.90	.12	5:00 a. m.	2	.76	.30
8:00 p. m.	15	1.64	0	3:30 p. m.	20	.90	0	5:10 a. m.	10	.80	.24
8:15 p. m.	15	1.65	.04	3:40 p. m.	10	.91	.06	5:20 a. m.	10	.83	.18
8:30 p. m.	15	1.66	.04	3:50 p. m.	10	.92	.06	5:30 a. m.	10	.84	.06
8:45 p. m.	15	1.67	.04	4:00 p. m.	10	1.00	.48	5:45 a. m.	15	.84	0
9:00 p. m.	15	1.68	.04	4:10 p. m.	10	1.09	.54	6:00 a. m.	15	.85	.04
9:15 p. m.	15	1.69	.04	4:20 p. m.	10	1.16	.42	6:15 a. m.	15	.86	.04
9:30 p. m.	15	1.69	0	4:30 p. m.	10	1.23	.42	6:41 a. m.	26	.86	0
9:45 p. m.	15	1.70	.04	4:35 p. m.	5	1.25	.24	6:42 a. m.	1	.88	1.20
10:00 p. m.	15	1.71	.04	4:40 p. m.	5	1.28	.36	6:45 a. m.	3	.89	.20
10:15 p. m.	15	1.72	.04	4:50 p. m.	10	1.31	.18	6:50 a. m.	5	.90	.12
11:00 p. m.	45	1.72	0	5:00 p. m.	10	1.33	.12	7:20 a. m.	30	.90	0
12:00 p. m.	60	1.74	.02	5:15 p. m.	15	1.38	.20	7:25 a. m.	5	.91	.12
June 19:				5:30 p. m.	15	1.43	.20	7:30 a. m.	5	.92	.12
1:00 a. m.	60	1.75	.01	5:45 p. m.	15	1.45	.08	7:35 a. m.	5	.93	.12
1:26 a. m. ⁴	26	1.76	.02	5:49 p. m.	4	1.46	.15	7:40 a. m.	5	.94	.12
STORM OF JULY 8				5:50 p. m.	1	1.48	1.20	7:44 a. m.	4	.95	.15
[Record missing]				5:51 p. m.	1	1.51	.60	7:45 a. m.	1	.97	1.20
STORM OF OCT. 25-27				5:55 p. m.	4	1.53	.30	7:50 a. m.	5	.98	.12
				6:00 p. m.	5	1.54	.12	8:00 a. m.	10	.99	.06
				6:05 p. m.	5	1.55	.12	8:06 a. m.	6	.99	0
				6:10 p. m.	5	1.57	.24	8:10 a. m.	4	1.02	.45
				6:15 p. m.	5	1.59	.24	8:15 a. m.	5	1.04	.24
				6:20 p. m.	5	1.61	.24	8:20 a. m.	5	1.04	0
				6:25 p. m.	5	1.66	.60	8:25 a. m.	5	1.05	.12
				6:30 p. m.	5	1.68	.24	8:30 a. m.	5	1.06	.12
				6:45 p. m.	15	1.70	.08	8:40 a. m.	10	1.10	.24
				7:00 p. m.	15	1.72	.08	8:50 a. m.	10	1.12	.12
				7:15 p. m.	15	1.74	.08	9:13 a. m.	23	1.12	0
				9:30 p. m.	135	1.74	0	9:14 a. m.	1	1.14	1.20
				9:45 p. m.	15	1.75	.04	9:15 a. m.	1	1.15	.60
				10:28 p. m.	43	1.75	0	9:20 a. m.	5	1.19	.48
				10:30 p. m.	2	1.80	1.50	9:24 a. m.	4	1.27	1.20
				10:35 p. m.	5	1.84	.48	9:25 a. m.	1	1.27	0
				10:40 p. m.	5	1.84	0	9:26 a. m.	1	1.28	.60
				10:45 p. m.	5	1.85	.12	9:27 a. m.	1	1.29	.60
				10:50 p. m.	5	1.86	.12	9:30 a. m.	3	1.30	.20
				11:30 p. m.	40	1.86	0	9:52 a. m.	22	1.30	0
				11:45 p. m.	15	1.88	.08	9:55 a. m.	3	1.31	.20
				Oct. 26:				10:00 a. m.	5	1.32	.12
				12:30 a. m.	45	1.88	0	10:17 a. m.	17	1.32	0
				1:00 a. m.	30	1.89	.02	10:20 a. m.	3	1.33	.20
				1:30 a. m.	30	1.90	.02	11:00 a. m.	40	1.33	0
				2:00 a. m.	30	1.91	.02	11:30 a. m.	30	1.34	.02
				2:05 a. m.	5	1.94	.36	12:00 m.	30	1.35	.02
				8:25 a. m.	380	1.94	0	1:27 p. m.	87	1.35	0
				8:30 a. m.	5	1.95	.12	1:30 p. m.	3	1.44	1.80
				8:35 a. m.	5	1.99	.48	1:35 p. m.	5	1.45	.12
				8:40 a. m.	5	2.01	.24	1:40 p. m.	5	1.46	.12
				8:43 a. m.	3	2.02	.20	3:20 p. m.	100	1.46	0
				8:45 a. m.	2	2.04	.60	3:30 p. m.	10	1.47	.06
				8:50 a. m.	5	2.14	1.20	4:25 p. m.	55	1.47	0
				8:52 a. m.	2	2.21	2.10	4:30 p. m.	5	1.48	.12
				8:53 a. m.	1	2.27	3.60	4:55 p. m.	25	1.48	0
				8:55 a. m.	2	2.30	.90	5:00 p. m.	5	1.49	.12
				8:56 a. m.	1	2.32	1.20	5:30 p. m.	30	1.51	.04
				8:57 a. m.	1	2.42	6.00	6:00 p. m. ³	30	1.52	.02
				9:00 a. m.	3	2.43	.20				

²Rain began.³Rain ended.⁴Remainder of record for June 19 faulty.

TABLE 118.—Rainfall at station 115¹ for selected storms, 1939

Date and time	Time interval	Accumulated depth	Intensity	Date and time	Time interval	Accumulated depth	Intensity	Date and time	Time interval	Accumulated depth	Intensity
STORM OF FEB. 14-15				STORM OF JULY 8—Continued				STORM OF OCT. 25-27—Continued			
Feb. 14:	Min.	In.	In. per hr.	July 8—Con.	Min.	In.	In. per hr.	Oct. 25—Con.	Min.	In.	In. per hr.
8:30 p. m. ²		0	0	12:55 p. m.	5	1.55	0.60	7:20 p. m.	20	1.56	0.03
8:50 p. m.	20	.02	.06	1:00 p. m.	5	1.59	.48	9:30 p. m.	130	1.56	0
9:00 p. m.	10	.04	.12	1:10 p. m.	10	1.72	.78	9:40 p. m.	10	1.58	.12
9:20 p. m.	20	.05	.03	1:15 p. m.	5	1.73	.12	9:50 p. m.	10	1.59	.06
9:40 p. m.	20	.05	0	1:20 p. m.	5	1.74	.12	10:00 p. m.	10	1.60	.06
10:00 p. m.	20	.06	.03	1:40 p. m.	20	1.75	.03	10:38 p. m.	38	1.60	0
10:20 p. m.	20	.07	.03	2:00 p. m. ³	20	1.76	.03	10:40 p. m.	2	1.65	1.50
10:40 p. m.	20	.10	.09	STORM OF OCT. 25-27				10:44 p. m.	4	1.69	.60
11:00 p. m.	20	.12	.06	Oct. 25:				10:50 p. m.	6	1.70	.10
11:20 p. m.	20	.16	.12	12:27 a. m. ²		0	0	11:00 p. m.	10	1.72	.12
11:40 p. m.	20	.19	.09	12:28 a. m.	1	.03	1.80	Oct. 26:			
11:50 p. m.	10	.21	.12	12:29 a. m.	1	.11	4.80	2:10 a. m.	190	1.72	0
12:00 p. m.	10	.23	.12	12:30 a. m.	1	.12	.60	2:15 a. m.	5	1.76	.48
Feb. 15:				12:40 a. m.	10	.13	.06	8:30 a. m.	375	1.76	0
12:10 a. m.	10	.25	.12	4:00 a. m.	200	.13	0	8:40 a. m.	10	1.80	.24
12:20 a. m.	10	.28	.18	4:30 a. m.	30	.14	.02	8:45 a. m.	5	2.01	2.52
12:30 a. m.	10	.30	.12	5:00 a. m.	30	.15	.02	8:50 a. m.	5	2.11	1.20
12:40 a. m.	10	.33	.18	5:10 a. m.	10	.17	.12	8:55 a. m.	3	2.18	1.80
12:45 a. m.	5	.35	.12	5:30 a. m.	20	.17	0	9:00 a. m.	7	2.24	.51
12:50 a. m.	5	.38	.18	5:40 a. m.	10	.18	.06	9:05 a. m.	5	2.28	.48
1:00 a. m.	10	.42	.24	5:50 a. m.	10	.19	.06	9:10 a. m.	5	2.30	.24
1:10 a. m.	10	.46	.24	6:30 a. m.	40	.19	0	10:10 a. m.	60	2.30	0
1:20 a. m.	10	.52	.36	6:40 a. m.	10	.20	.06	10:30 a. m.	20	2.31	.03
1:30 a. m.	10	.57	.30	6:50 a. m.	10	.20	0	10:50 a. m. ³	20	2.32	.03
1:40 a. m.	10	.62	.30	7:00 a. m.	10	.21	.06	Oct. 27:			
1:50 a. m.	10	.67	.30	7:10 a. m.	10	.22	.06	4:00 a. m. ²		0	0
2:00 a. m.	10	.72	.30	7:20 a. m.	10	.23	.06	4:02 a. m.	2	.06	1.80
2:10 a. m.	10	.76	.24	7:27 a. m.	7	.26	.26	4:08 a. m.	6	.10	.40
2:20 a. m.	10	.81	.30	7:30 a. m.	3	.27	.20	4:10 a. m.	2	.13	.90
2:30 a. m.	10	.87	.36	8:00 a. m.	30	.27	0	4:20 a. m.	10	.15	.12
2:40 a. m.	10	.92	.30	8:10 a. m.	10	.28	.06	4:30 a. m.	10	.21	.36
2:50 a. m.	10	.96	.24	8:20 a. m.	10	.29	.06	4:32 a. m.	2	.26	1.50
3:00 a. m.	10	1.00	.24	8:30 a. m.	10	.31	.12	4:40 a. m.	8	.38	.90
3:10 a. m.	10	1.04	.24	9:10 a. m.	40	.31	0	4:45 a. m.	5	.41	.36
3:20 a. m.	10	1.05	.06	9:20 a. m.	10	.32	.06	4:50 a. m.	5	.53	1.44
3:25 a. m.	5	1.08	.36	9:30 a. m.	10	.33	.06	4:55 a. m.	5	.59	.72
3:30 a. m.	5	1.10	.24	9:40 a. m.	10	.34	.06	5:00 a. m.	5	.61	.24
3:40 a. m.	10	1.14	.24	9:50 a. m.	10	.36	.12	5:10 a. m.	10	.64	.18
3:50 a. m.	10	1.16	.12	10:00 a. m.	10	.39	.18	5:20 a. m.	10	.65	.06
4:00 a. m.	10	1.18	.12	10:10 a. m.	10	.41	.12	5:30 a. m.	10	.66	.06
4:20 a. m.	20	1.19	.03	10:20 a. m.	10	.42	.06	6:48 a. m.	78	.66	0
4:40 a. m.	20	1.20	.03	10:30 a. m.	10	.43	.06	6:50 a. m.	2	.68	.60
5:00 a. m.	20	1.22	.06	1:00 p. m.	150	.43	0	7:00 a. m.	10	.70	.12
5:40 a. m.	40	1.23	.02	1:10 p. m.	10	.46	.18	7:30 a. m.	30	.70	0
6:20 a. m.	40	1.23	0	1:20 p. m.	10	.48	.12	7:40 a. m.	10	.72	.12
7:00 a. m.	40	1.24	.02	1:40 p. m.	20	.49	.03	7:50 a. m.	10	.75	.18
7:40 a. m.	40	1.26	.03	2:00 p. m.	20	.50	.03	7:52 a. m.	2	.77	.60
8:00 a. m.	20	1.28	.06	2:20 p. m.	20	.54	.12	7:55 a. m.	3	.78	.20
12:30 p. m.	270	1.28	0	2:30 p. m.	10	.58	.24	8:10 a. m.	15	.78	0
12:50 p. m.	20	1.29	.03	2:40 p. m.	5	.62	.48	8:16 a. m.	6	.79	.10
1:00 p. m.	10	1.31	.12	2:45 p. m.	5	.67	.60	8:20 a. m.	4	.83	.60
1:16 p. m.	16	1.31	0	2:50 p. m.	5	.76	.84	8:30 a. m.	10	.83	0
1:18 p. m.	2	1.33	.60	3:00 p. m.	10	.80	.24	8:38 a. m.	8	.85	.15
1:30 p. m.	12	1.34	.05	3:10 p. m.	10	.83	.18	8:40 a. m.	2	.87	.60
2:00 p. m. ³	30	1.35	.02	3:20 p. m.	10	.85	.12	8:50 a. m.	10	.89	.12
STORM OF JUNE 18-19				3:40 p. m.	10	.85	0	9:00 a. m.	10	.91	.12
[Record missing]				3:50 p. m.	10	.86	.06	9:10 a. m.	10	.91	0
STORM OF JULY 8				4:00 p. m.	10	.87	.06	9:18 a. m.	8	.92	.08
July 8:				4:10 p. m.	10	.95	.48	9:20 a. m.	2	.94	.60
5:14 a. m. ²		0	0	4:15 p. m.	5	1.00	.60	9:25 a. m.	5	.95	.12
5:15 a. m.	1	.07	4.20	4:20 p. m.	5	1.02	.24	9:28 a. m.	3	1.01	1.20
5:20 a. m.	5	.24	2.04	4:30 p. m.	10	1.09	.42	9:30 a. m.	2	1.03	.60
5:22 a. m.	2	.28	1.20	4:40 p. m.	10	1.13	.24	9:32 a. m.	2	1.05	.60
7:40 a. m.	138	.28	0	4:50 p. m.	10	1.17	.24	9:40 a. m.	8	1.05	0
7:45 a. m.	5	.36	.96	5:00 p. m.	10	1.19	.12	9:50 a. m.	10	1.06	.06
7:47 a. m.	2	.43	2.10	5:10 p. m.	10	1.21	.12	10:00 a. m.	10	1.07	.06
7:52 a. m.	5	.43	0	5:20 p. m.	10	1.24	.18	12:30 p. m.	150	1.07	0
7:55 a. m.	3	.59	3.20	5:30 p. m.	10	1.29	.30	12:40 p. m.	10	1.10	.18
8:00 a. m.	5	.63	.48	5:40 p. m.	10	1.31	.12	12:56 p. m.	6	1.10	0
8:05 a. m.	5	.68	.60	5:50 p. m.	10	1.32	.06	1:30 p. m.	1	1.11	.60
8:06 a. m.	1	.87	11.40	5:59 p. m.	9	1.33	.07	1:34 p. m.	4	1.12	.15
8:10 a. m.	4	.89	.30	6:00 p. m.	1	1.36	1.80	1:37 p. m.	3	1.21	1.80
8:15 a. m.	5	1.01	1.44	6:10 p. m.	10	1.38	.12	1:40 p. m.	3	1.23	.40
8:20 a. m.	5	1.13	1.44	6:20 p. m.	10	1.42	.24	1:50 p. m.	10	1.24	.06
12:30 p. m.	250	1.13	0	6:30 p. m.	10	1.45	.18	3:20 p. m.	90	1.24	0
12:36 p. m.	6	1.36	2.30	6:34 p. m.	4	1.52	1.05	3:30 p. m.	10	1.25	.06
12:49 p. m.	13	1.36	0	7:00 p. m.	10	1.55	.06	3:40 p. m.	10	1.27	.12
12:50 p. m.	1	1.40	2.40					4:29 p. m.	49	1.27	0
								4:30 p. m.	1	1.28	.60
								5:00 p. m.	30	1.28	0
								5:10 p. m.	10	1.30	.12
								5:20 p. m. ³	10	1.31	.06

¹ For location of rainfall station see fig. 2.² Rain began.³ Rain ended.

TABLE 119.—*Rainfall at station 116¹ for selected storms, 1939*

STORM OF FEB. 14-15				STORM OF JUNE 18-19—Continued				STORM OF JULY 8—Continued			
Date and time	Time interval	Accumulated depth	Intensity	Date and time	Time interval	Accumulated depth	Intensity	Date and time	Time interval	Accumulated depth	Intensity
Feb. 14:				June 18—Con.				July 8—Con.			
8:20 p. m. ²		0	0	11:40 a. m.	5	1.09	0.36	7:45 a. m.	5	0.41	1.08
8:40 p. m.	20	.02	.06	11:45 a. m.	5	1.14	.60	7:46 a. m.	1	.45	2.40
9:00 p. m.	20	.04	.06	12:00 m.	15	1.19	.20	7:50 a. m.	4	.46	.15
9:20 p. m.	20	.05	.03	12:15 p. m.	15	1.21	.08	7:54 a. m.	4	.61	2.25
9:40 p. m.	20	.06	.03	12:20 p. m.	5	1.25	.48	7:55 a. m.	1	.62	.60
10:00 p. m.	20	.07	.03	12:25 p. m.	5	1.30	.60	8:00 a. m.	5	.76	1.63
10:20 p. m.	20	.09	.06	12:30 p. m.	5	1.34	.48	8:03 a. m.	3	.86	2.00
10:40 p. m.	20	.11	.06	1:00 p. m.	30	1.36	.04	8:05 a. m.	2	.88	.60
10:50 p. m.	10	.13	.12	1:30 p. m.	30	1.37	.02	8:10 a. m.	5	.95	.84
11:00 p. m.	10	.14	.06	2:38 p. m.	68	1.37	0	8:15 a. m.	5	1.07	1.44
11:10 p. m.	10	.16	.12	2:40 p. m.	2	1.38	.30	8:17 a. m.	2	1.11	1.20
11:20 p. m.	10	.17	.06	2:50 p. m.	10	1.39	.06	8:20 a. m.	3	1.12	.20
11:30 p. m.	10	.19	.12	3:00 p. m.	10	1.39	0	12:30 p. m.	250	1.12	0
11:40 p. m.	10	.21	.12	4:00 p. m.	60	1.40	.01	12:35 p. m.	5	1.34	2.64
11:50 p. m.	10	.23	.12	5:00 p. m.	60	1.41	.01	12:37 p. m.	2	1.40	1.80
12:00 p. m.	10	.25	.12	6:00 p. m.	60	1.43	.02	12:50 p. m.	13	1.40	0
Feb. 15:				6:40 p. m.	40	1.43	0	12:55 p. m.	5	1.58	2.16
12:10 a. m.	10	.27	.12	6:45 p. m.	5	1.46	.36	1:00 p. m.	5	1.65	.84
12:20 a. m.	10	.30	.18	6:50 p. m.	5	1.50	.48	1:05 p. m.	5	1.73	.96
12:30 a. m.	10	.32	.12	6:55 p. m.	5	1.54	.48	1:10 p. m.	5	1.79	.72
12:40 a. m.	10	.35	.18	7:00 p. m.	5	1.56	.24	1:20 p. m.	10	1.82	.18
12:50 a. m.	10	.39	.24	7:02 p. m.	2	1.57	.30	1:30 p. m.	10	1.83	.06
1:00 a. m.	10	.44	.30	7:05 p. m.	3	1.58	.20	1:50 p. m.	20	1.83	0
1:10 a. m.	10	.48	.24	7:10 p. m.	5	1.60	.24	2:00 p. m.	10	1.85	.12
1:20 a. m.	10	.53	.30	7:15 p. m.	5	1.62	.24	2:10 p. m. ³	10	1.86	.06
1:30 a. m.	10	.59	.36	7:30 p. m.	15	1.64	.08				
1:40 a. m.	10	.64	.30	7:45 p. m.	15	1.68	.16				
1:50 a. m.	10	.70	.36	8:00 p. m.	15	1.68	.16				
2:00 a. m.	10	.75	.30	9:36 p. m.	96	1.68	0				
2:10 a. m.	10	.79	.24	9:40 p. m.	4	1.71	.45				
2:20 a. m.	10	.84	.30	9:50 p. m.	10	1.75	.24				
2:30 a. m.	10	.89	.30	10:00 p. m.	10	1.77	.12				
2:40 a. m.	10	.94	.30	10:30 p. m.	30	1.80	.06				
2:50 a. m.	10	.98	.24	11:00 p. m.	30	1.82	.04				
3:00 a. m.	10	1.02	.24	11:30 p. m.	30	1.83	.02				
3:10 a. m.	10	1.06	.24	11:40 p. m.	10	1.86	.18				
3:20 a. m.	10	1.08	.12	11:50 p. m.	10	1.88	.12				
3:30 a. m.	10	1.12	.24	11:53 p. m.	3	1.89	.20				
3:40 a. m.	10	1.16	.24	11:55 p. m.	2	1.90	.30				
3:50 a. m.	10	1.18	.12	12:00 p. m.	5	1.93	.36				
4:00 a. m.	10	1.20	.12	June 19:							
4:20 a. m.	20	1.22	.06	12:05 a. m.	5	1.95	.24				
4:40 a. m.	20	1.23	.03	12:10 a. m.	5	1.97	.24				
5:00 a. m.	20	1.24	.03	12:15 a. m.	5	2.01	.48				
5:40 a. m.	40	1.25	.02	12:20 a. m.	5	2.06	.60				
6:20 a. m.	40	1.26	.02	12:25 a. m.	5	2.12	.72				
7:00 a. m.	40	1.27	.02	12:30 a. m.	5	2.18	.72				
7:40 a. m.	40	1.28	.02	12:35 a. m.	5	2.24	.72				
8:20 a. m.	40	1.30	.03	12:40 a. m.	5	2.27	.36				
9:00 a. m.	40	1.31	.02	12:45 a. m.	5	2.30	.36				
9:20 a. m.	20	1.32	.03	12:50 a. m.	5	2.31	.12				
12:40 p. m.	200	1.32	0	12:55 a. m.	5	2.33	.24				
1:00 p. m.	20	1.33	.03	1:00 a. m.	5	2.34	.12				
1:14 p. m.	14	1.34	.04	1:30 a. m.	30	2.35	.02				
1:15 p. m.	1	1.39	3.00	2:00 a. m.	30	2.35	0				
1:30 p. m. ³	15	1.40	.04	2:30 a. m.	30	2.36	.02				
STORM OF JUNE 18-19				2:40 a. m.	10	2.38	.12				
				2:50 a. m.	10	2.39	.06				
				3:00 a. m.	10	2.43	.24				
				3:10 a. m.	10	2.46	.18				
				3:20 a. m.	10	2.53	.42				
				3:30 a. m.	10	2.59	.36				
				3:40 a. m.	10	2.62	.18				
				3:50 a. m.	10	2.64	.12				
				4:00 a. m.	10	2.65	.06				
				4:10 a. m.	10	2.67	.12				
				4:20 a. m.	10	2.68	.06				
				4:30 a. m.	10	2.69	.06				
				4:40 a. m.	10	2.70	.06				
				5:50 a. m.	70	2.70	0				
				6:00 a. m.	10	2.71	.06				
				6:50 a. m.	50	2.71	0				
				6:55 a. m.	5	2.73	.24				
				7:20 a. m.	25	2.73	0				
				7:30 a. m.	10	2.75	.12				
				7:40 a. m.	10	2.77	.12				
				7:50 a. m.	10	2.79	.12				
				8:00 a. m.	10	2.81	.12				
				8:10 a. m.	10	2.83	.12				
				8:20 a. m. ³	10	2.84	.06				
				STORM OF JULY 8							
				July 8:							
				5:12 a. m. ²		0	0				
				5:15 a. m.	3	.10	2.00				
				5:17 a. m.	2	.20	3.00				
				5:20 a. m.	3	.26	1.20				
				5:22 a. m.	2	.30	1.20				
				7:30 a. m.	128	.30	0				
				7:40 a. m.	10	.32	.12				
				STORM OF JULY 8							
				July 8:							
				5:12 a. m. ²		0	0				
				5:15 a. m.	3	.10	2.00				
				5:17 a. m.	2	.20	3.00				
				5:20 a. m.	3	.26	1.20				
				5:22 a. m.	2	.30	1.20				
				7:30 a. m.	128	.30	0				
				7:40 a. m.	10	.32	.12				

¹ For location of rainfall station see fig. 2.

² Rain began.

³ Rain ended.

TABLE 119.—Rainfall at station 116 for selected storms, 1939—Continued

Date and time	Time interval	Accumulated depth	Intensity	Date and time	Time interval	Accumulated depth	Intensity	Date and time	Time interval	Accumulated depth	Intensity
STORM OF OCT. 25-27—Continued				STORM OF OCT. 25-27—Continued				STORM OF OCT. 25-27—Continued			
Oct. 25—Con.	Min.	In.	In. per hr.	Oct. 27:	Min.	In.	In. per hr.	Oct. 27—Con.	Min.	In.	In. per hr.
6:00 p. m.	15	1.36	0.08	3:57 a. m. ²		0	0	8:20 a. m.	5	0.91	0.36
6:01 p. m.	1	1.37	.60	4:00 a. m.	3	.03	.60	8:25 a. m.	5	.92	.12
6:02 p. m.	1	1.39	1.20	4:03 a. m.	3	.13	2.00	8:30 a. m.	5	.93	.12
6:05 p. m.	3	1.40	.20	4:05 a. m.	2	.14	.30	8:35 a. m.	5	.94	.12
6:10 p. m.	5	1.41	.12	4:10 a. m.	5	.16	.24	8:40 a. m.	5	.96	.24
6:20 p. m.	10	1.43	.12	4:20 a. m.	10	.20	.24	8:45 a. m.	5	.97	.12
6:30 p. m.	10	1.47	.24	4:30 a. m.	10	.23	.18	8:50 a. m.	5	.98	.12
6:34 p. m.	4	1.51	.60	4:35 a. m.	5	.24	.12	8:55 a. m.	5	1.00	.24
6:35 p. m.	1	1.54	1.80	4:40 a. m.	5	.30	.72	9:15 a. m.	20	1.00	0
6:37 p. m.	2	1.56	.60	4:43 a. m.	3	.36	1.20	9:20 a. m.	5	1.01	.12
6:40 p. m.	3	1.57	.20	4:45 a. m.	2	.39	.90	9:25 a. m.	5	1.05	.48
6:50 p. m.	10	1.58	.06	4:50 a. m.	5	.45	.72	9:26 a. m.	1	1.06	.60
7:00 p. m.	10	1.59	.06	4:55 a. m.	5	.49	.48	9:30 a. m.	4	1.13	1.05
7:15 p. m.	15	1.60	.04	4:57 a. m.	2	.53	1.20	9:35 a. m.	5	1.15	.24
7:30 p. m.	15	1.61	.04	5:00 a. m.	3	.61	1.60	9:40 a. m.	5	1.15	0
7:45 p. m.	15	1.62	.04	5:03 a. m.	3	.64	.60	9:50 a. m.	10	1.16	.06
10:42 p. m.	177	1.62	0	5:04 a. m.	1	.66	1.20	9:56 a. m.	6	1.16	0
10:45 p. m.	3	1.70	1.60	5:05 a. m.	1	.67	.60	10:00 a. m.	4	1.17	.15
10:46 p. m.	1	1.72	1.20	5:10 a. m.	5	.69	.24	10:15 a. m.	15	1.18	.04
10:50 p. m.	4	1.74	.30	5:20 a. m.	10	.73	.24	10:30 a. m.	15	1.20	.08
10:55 p. m.	5	1.74	0	5:30 a. m.	10	.75	.12	1:36 p. m.	186	1.20	0
11:00 p. m.	5	1.76	.24	6:00 a. m.	30	.75	0	1:38 p. m.	2	1.30	3.00
12:00 p. m.	60	1.78	.02	6:30 a. m.	30	.76	.02	1:40 p. m.	2	1.31	.30
Oct. 26:				6:49 a. m.	19	.76	0	1:45 p. m.	5	1.32	.12
1:00 a. m.	60	1.79	.01	6:50 a. m.	1	.78	1.20	1:50 p. m.	5	1.33	.12
2:00 a. m.	60	1.80	.01	6:55 a. m.	5	.79	.12	3:23 p. m.	93	1.33	0
2:15 a. m.	15	1.80	0	7:30 a. m.	35	.79	0	3:25 p. m.	2	1.34	.30
2:18 a. m.	3	1.84	.80	7:40 a. m.	10	.80	.06	3:30 p. m.	5	1.34	0
8:40 a. m.	382	1.84	0	7:50 a. m.	10	.82	.12	3:40 p. m.	10	1.35	.06
8:45 a. m.	5	1.85	.12	7:53 a. m.	3	.83	.20	4:30 p. m.	50	1.35	0
8:46 a. m.	1	1.85	0	7:54 a. m.	1	.85	1.20	4:32 p. m.	2	1.36	.30
8:50 a. m.	4	2.10	3.75	7:55 a. m.	1	.85	0	5:00 p. m.	28	1.36	0
8:54 a. m.	4	2.30	3.00	8:00 a. m.	5	.87	.24	5:10 p. m.	10	1.38	.12
8:55 a. m.	1	2.31	.60	8:10 a. m.	10	.88	.06	5:20 p. m. ³	10	1.39	.06
9:00 a. m.	5	2.35	.48	8:15 a. m.	5	.88	0				
9:10 a. m. ²	10	2.36	.06								

² Rain began.³ Rain ended.TABLE 120.—Rainfall at station 119¹ for selected storms, 1939

Date and time	Time interval	Accumulated depth	Intensity	Date and time	Time interval	Accumulated depth	Intensity	Date and time	Time interval	Accumulated depth	Intensity
STORM OF FEB. 14-15				STORM OF FEB. 14-15—Continued				STORM OF JUNE 18-19—Continued			
Feb. 14:	Min.	In.	In. per hr.	Feb. 15—Con.	Min.	In.	In. per hr.	June 18—Con.	Min.	In.	In. per hr.
8:30 p. m. ²		0	0	5:00 a. m.	20	1.26	0.03	11:40 a. m.	10	1.32	0.60
9:00 p. m.	30	.03	.06	6:00 a. m.	60	1.27	.01	11:50 a. m.	10	1.38	.36
9:20 p. m.	20	.04	.03	7:00 a. m.	60	1.28	.01	12:00 m.	10	1.44	.36
9:40 p. m.	20	.05	.03	8:00 a. m.	60	1.31	.03	12:10 p. m.	10	1.47	.18
10:00 p. m.	20	.07	.06	9:00 a. m.	60	1.33	.02	12:20 p. m.	10	1.52	.30
10:20 p. m.	20	.08	.03	9:30 a. m.	30	1.34	.02	12:30 p. m.	10	1.56	.24
10:40 p. m.	20	.11	.09	12:44 p. m.	194	1.34	0	12:40 p. m.	10	1.62	.36
11:00 p. m.	20	.14	.09	12:50 p. m.	6	1.36	.20	12:50 p. m.	10	1.64	.12
11:10 p. m.	10	.16	.12	1:00 p. m. ²	10	1.38	.12	1:10 p. m.	20	1.65	.03
11:20 p. m.	10	.17	.06					1:20 p. m.	10	1.67	.12
11:30 p. m.	10	.18	.06	STORM OF JUNE 18-19				1:30 p. m.	10	1.70	.18
11:40 p. m.	10	.20	.12	June 18:				1:35 p. m.	5	1.72	.24
11:50 p. m.	10	.22	.12	7:30 a. m. ²		0	0	2:38 p. m.	63	1.72	0
12:00 p. m.	10	.25	.18	7:45 a. m.	15	.02	.08	2:40 p. m.	2	1.73	.30
Feb. 15:				8:00 a. m.	15	.05	.12	2:43 p. m.	3	1.74	.20
12:10 a. m.	10	.27	.12	8:10 a. m.	10	.10	.30	4:45 p. m.	122	1.74	0
12:20 a. m.	10	.30	.18	8:20 a. m.	10	.13	.18	4:50 p. m.	5	1.76	.24
12:30 a. m.	10	.33	.18	8:30 a. m.	10	.16	.18	4:55 p. m.	5	1.79	.36
12:40 a. m.	10	.36	.18	8:40 a. m.	10	.18	.12	5:00 p. m.	5	1.80	.12
12:50 a. m.	10	.41	.30	8:50 a. m.	10	.20	.12	5:30 p. m.	30	1.80	0
1:00 a. m.	10	.45	.24	8:54 a. m.	4	.25	.75	6:00 p. m.	30	1.81	.02
1:10 a. m.	10	.50	.30	8:55 a. m.	1	.29	2.40	6:30 p. m.	30	1.82	.02
1:20 a. m.	10	.55	.30	9:00 a. m.	5	.32	.36	6:42 p. m.	12	1.82	0
1:30 a. m.	10	.61	.36	9:05 a. m.	5	.34	.24	6:45 p. m.	3	1.83	.20
1:40 a. m.	10	.67	.36	9:10 a. m.	5	.40	.48	6:50 p. m.	5	1.86	.36
1:50 a. m.	10	.72	.30	9:20 a. m.	10	.42	.12	7:00 p. m.	10	1.87	.06
2:00 a. m.	10	.78	.36	9:30 a. m.	10	.45	.18	7:10 p. m.	10	1.90	.18
2:10 a. m.	10	.81	.18	9:40 a. m.	10	.48	.18	7:20 p. m.	10	1.91	.06
2:20 a. m.	10	.87	.36	9:50 a. m.	10	.54	.36	7:30 p. m.	10	1.94	.18
2:30 a. m.	10	.92	.30	10:00 a. m.	10	.57	.18	7:40 p. m.	10	1.94	0
2:40 a. m.	10	.97	.30	10:15 a. m.	15	.63	.24	7:50 p. m.	10	2.02	.48
2:50 a. m.	10	1.01	.24	10:30 a. m.	15	.69	.24	8:00 p. m.	10	2.08	.36
3:00 a. m.	10	1.05	.24	10:45 a. m.	15	.74	.20	8:15 p. m.	15	2.10	.08
3:10 a. m.	10	1.10	.30	11:00 a. m.	15	.80	.24	8:30 p. m.	15	2.11	.04
3:20 a. m.	10	1.12	.12	11:05 a. m.	5	.84	.48	9:00 p. m.	30	2.11	0
3:30 a. m.	10	1.16	.24	11:10 a. m.	5	.94	1.20	9:30 p. m.	30	2.13	.04
3:40 a. m.	10	1.18	.12	11:20 a. m.	10	1.09	.90	10:00 p. m.	30	2.14	.02
3:50 a. m.	10	1.20	.12	11:30 a. m.	10	1.22	.78	June 19:			
4:00 a. m.	10	1.22	.12					1:45 a. m.	225	2.14	0
4:20 a. m.	20	1.24	.06					1:50 a. m.	5	2.16	.24
4:40 a. m.	20	1.25	.03					2:00 a. m.	10	2.18	.12

¹ For location of rainfall station see fig. 2.² Rain began.³ Rain ended.

TABLE 120.—Rainfall at station 119 for selected storms, 1939—Continued

Date and time	Time interval	Accumulated depth	Intensity	Date and time	Time interval	Accumulated depth	Intensity	Date and time	Time interval	Accumulated depth	Intensity
STORM OF JUNE 18-19—Continued				STORM OF OCT. 25-27				STNRM OF OCT. 25-27—Continued			
June 19—Con.	Min.	In.	In. per hr.	Oct. 25:	Min.	In.	In. per hr.	Oct. 26:	Min.	In.	In. per hr.
2:10 a. m.	10	2.20	0.12	12:18 a. m. ²		0	0	1:00 a. m.	60	1.78	0.01
2:20 a. m.	10	2.21	.06	12:20 a. m.	2	.08	2.40	2:00 a. m.	60	1.78	0
2:30 a. m.	10	2.23	.12	12:22 a. m.	2	.10	.60	2:10 a. m.	10	1.79	.06
4:00 a. m.	90	2.23	0	12:30 a. m.	8	.11	.08	2:20 a. m.	10	1.81	.12
4:15 a. m.	15	2.24	.04	3:00 a. m.	150	.11	0	3:30 a. m.	370	1.81	0
4:30 a. m.	15	2.26	.08	3:30 a. m.	30	.12	.02	8:40 a. m.	10	1.82	.06
4:45 a. m.	15	2.26	0	4:00 a. m.	30	.13	.02	8:50 a. m.	10	1.89	.42
5:00 a. m.	15	2.27	.04	4:30 a. m.	30	.14	.02	9:00 a. m.	10	1.94	.30
7:45 a. m.	165	2.27	0	5:00 a. m.	30	.15	.02	9:10 a. m.	10	2.02	.48
7:50 a. m.	5	2.28	.12	5:30 a. m.	30	.17	.04	9:20 a. m.	10	2.06	.24
7:55 a. m.	5	2.32	.48	6:30 a. m.	60	.17	0	9:30 a. m.	10	2.11	.30
8:00 a. m.	5	2.36	.48	6:33 a. m.	3	.19	.40	9:40 a. m.	10	2.15	.24
8:30 a. m.	30	2.36	0	7:00 a. m.	27	.20	.02	9:48 a. m.	8	2.28	.98
9:00 a. m.	30	2.37	.02	7:15 a. m.	15	.23	.12	9:50 a. m.	2	2.29	.30
9:30 a. m.	30	2.38	.02	7:25 a. m.	10	.26	.18	10:00 a. m.	10	2.29	0
9:54 a. m.	24	2.38	0	7:30 a. m.	5	.26	0	10:10 a. m. ³	10	2.30	.06
9:55 a. m.	1	2.42	2.40	8:00 a. m.	30	.27	.02	Oct. 27:			
10:30 a. m.	35	2.42	0	8:30 a. m.	30	.30	.06	4:00 a. m. ²		0	0
11:00 a. m.	30	2.44	.04	9:00 a. m.	30	.31	.02	4:02 a. m.	2	.01	.30
11:30 a. m.	30	2.45	.02	9:30 a. m.	30	.34	.06	4:05 a. m.	3	.10	1.80
12:00 m.	30	2.50	.10	10:00 a. m.	30	.40	.12	4:10 a. m.	5	.13	.36
12:30 p. m.	30	2.54	.08	10:30 a. m.	30	.43	.06	4:20 a. m.	10	.18	.30
1:30 p. m.	60	2.54	0	11:00 a. m.	30	.44	.02	4:30 a. m.	10	.20	.12
1:45 p. m.	15	2.56	.08	12:50 p. m.	110	.44	0	4:40 a. m.	10	.26	.36
2:00 p. m.	15	2.57	.04	1:00 p. m.	10	.46	.12	4:45 a. m.	5	.35	1.08
2:15 p. m. ³	15	2.58	.04	1:10 p. m.	10	.48	.12	4:50 a. m.	5	.40	.60
				1:20 p. m.	10	.49	.06	4:55 a. m.	5	.47	.84
				1:40 p. m.	20	.49	0	4:58 a. m.	3	.49	.40
				1:50 p. m.	10	.50	.06	5:00 a. m.	2	.54	1.50
				2:00 p. m.	10	.52	.12	5:05 a. m.	5	.67	1.56
				2:10 p. m.	10	.53	.06	5:10 a. m.	5	.69	.24
				2:20 p. m.	10	.57	.24	5:20 a. m.	10	.73	.24
				2:30 p. m.	10	.62	.30	5:30 a. m.	10	.75	.12
				2:40 p. m.	10	.70	.48	5:40 a. m.	10	.75	0
				2:50 p. m.	10	.76	.36	5:50 a. m.	10	.76	.06
				3:00 p. m.	10	.80	.24	6:00 a. m.	10	.76	0
				3:10 p. m.	10	.83	.18	6:10 a. m.	10	.77	.06
				3:20 p. m.	10	.84	.06	6:20 a. m.	10	.77	0
				3:40 p. m.	10	.84	0	6:40 a. m.	20	.78	.03
				3:50 p. m.	10	.86	.12	7:00 a. m.	20	.80	.06
				4:00 p. m.	10	.90	.24	7:20 a. m.	20	.80	0
				4:10 p. m.	10	.98	.48	7:40 a. m.	20	.82	.06
				4:20 p. m.	10	1.06	.48	7:54 a. m.	14	.83	.04
				4:30 p. m.	10	1.12	.36	8:00 a. m.	6	.87	.40
				4:40 p. m.	10	1.16	.24	8:20 a. m.	20	.88	.03
				4:43 p. m.	3	1.20	.80	8:25 a. m.	5	.92	.48
				4:50 p. m.	7	1.22	.17	8:35 a. m.	10	.92	0
				5:00 p. m.	10	1.24	.12	8:36 a. m.	1	.94	1.20
				5:10 p. m.	10	1.27	.18	8:40 a. m.	4	.95	.15
				5:20 p. m.	10	1.30	.18	8:50 a. m.	10	.97	.12
				5:30 p. m.	10	1.33	.18	9:00 a. m.	10	1.00	.18
				5:40 p. m.	10	1.34	.06	9:20 a. m.	20	1.00	0
				5:50 p. m.	10	1.36	.12	9:25 a. m.	5	1.02	.24
				5:56 p. m.	6	1.39	.30	9:29 a. m.	4	1.04	.30
				6:00 p. m.	4	1.40	.15	9:30 a. m.	1	1.08	2.40
				6:10 p. m.	10	1.41	.06	9:32 a. m.	2	1.11	.90
				6:20 p. m.	10	1.45	.24	9:35 a. m.	3	1.12	.20
				6:24 p. m.	4	1.47	.30	9:40 a. m.	5	1.13	.12
				6:30 p. m.	6	1.55	.80	10:00 a. m.	20	1.14	.03
				6:40 p. m.	10	1.56	.06	10:20 a. m.	20	1.15	.03
				6:50 p. m.	10	1.58	.12	1:38 p. m.	198	1.15	0
				7:10 p. m.	20	1.58	0	1:40 p. m.	2	1.20	1.50
				7:20 p. m.	10	1.59	.06	1:42 p. m.	2	1.24	1.20
				7:30 p. m.	10	1.60	.06	1:50 p. m.	8	1.25	.08
				9:40 p. m.	130	1.60	0	3:30 p. m.	100	1.25	0
				10:00 p. m.	20	1.61	.03	3:40 p. m.	10	1.27	.12
				10:20 p. m.	20	1.62	.03	3:50 p. m.	10	1.28	.06
				10:35 p. m.	15	1.62	0	5:00 p. m.	70	1.28	0
				10:40 p. m.	5	1.70	.96	5:10 p. m.	10	1.29	.06
				10:44 p. m.	4	1.73	.45	5:20 p. m.	10	1.29	0
				10:50 p. m.	6	1.74	.10	5:30 p. m. ³	10	1.30	.06
				11:00 p. m.	10	1.76	.12				
				12:00 p. m.	60	1.77	.01				
STORM OF JULY 8											
July 8:											
5:12 a. m. ²		0	0								
5:15 a. m.	3	.04	.80								
5:20 a. m.	5	.13	1.08								
5:23 a. m.	3	.18	1.00								
7:34 a. m.	131	.18	0								
7:35 a. m.	1	.21	1.80								
7:36 a. m.	1	.22	.60								
7:40 a. m.	4	.22	0								
7:45 a. m.	5	.31	1.08								
7:47 a. m.	2	.38	2.10								
7:50 a. m.	3	.39	.20								
7:52 a. m.	2	.39	0								
7:55 a. m.	3	.53	2.80								
8:00 a. m.	5	.59	.72								
8:05 a. m.	5	.65	.72								
8:07 a. m.	2	.68	.90								
8:08 a. m.	1	.88	12.00								
8:10 a. m.	2	.91	.90								
8:15 a. m.	5	1.02	1.32								
8:17 a. m.	2	1.07	1.50								
8:20 a. m.	3	1.08	.20								
9:40 a. m.	80	1.08	0								
10:00 a. m.	20	1.09	.03								
10:20 a. m.	20	1.10	.03								
12:31 p. m.	131	1.10	0								
12:35 p. m.	4	1.26	2.40								
12:40 p. m.	5	1.43	2.04								
12:42 p. m.	2	1.49	1.80								
12:51 p. m.	9	1.49	0								
12:55 p. m.	4	1.58	1.35								
1:00 p. m.	5	1.68	1.20								
1:05 p. m.	5	1.74	.72								
1:10 p. m.	5	1.79	.60								
1:15 p. m.	5	1.82	.36								
1:20 p. m.	5	1.84	.24								
1:50 p. m.	30	1.84	0								
2:00 p. m.	10	1.85	.06								
2:10 p. m. ³	10	1.86	.06								

² Rain began.³ Rain ended.

TABLE 121.—Rainfall at station 145¹ for selected storms, 1939

Date and time	Time interval	Accumulated depth	Intensity	Date and time	Time interval	Accumulated depth	Intensity	Date and time	Time interval	Accumulated depth	Intensity
STORM OF FEB. 14-15 [Record missing]				STORM OF JULY 8				STORM OF OCT. 25-27—Continued			
STORM OF JUNE 18-19				July 8:	Min.	In.	In. per hr.	Oct. 25—Con.	Min.	In.	In. per hr.
June 18:				5:05 a. m. ²		0	0	1:15 p. m.	15	0.56	0.08
7:30 a. m. ²		0	0	5:06 a. m.	1	.05	3.00	1:30 p. m.	15	.57	.04
7:45 a. m.	15	.02	.08	5:07 a. m.	1	.09	2.40	1:45 p. m.	15	.59	.08
8:00 a. m.	15	.08	.24	5:09 a. m.	2	.27	5.40	2:00 p. m.	15	.62	.12
8:15 a. m.	15	.11	.12	5:10 a. m.	1	.35	4.80	2:15 p. m.	15	.65	.12
8:30 a. m.	15	.13	.08	5:12 a. m.	2	.46	3.30	2:20 p. m.	5	.67	.24
8:35 a. m.	5	.15	.24	5:13 a. m.	1	.52	3.60	2:25 p. m.	5	.69	.24
8:37 a. m.	2	.16	.30	5:14 a. m.	1	.56	2.40	2:30 p. m.	5	.74	.60
8:40 a. m.	3	.17	.20	5:15 a. m.	1	.60	2.40	2:45 p. m.	15	.82	.32
8:45 a. m.	5	.19	.24	5:17 a. m.	2	.64	1.20	3:00 p. m.	15	.87	.20
8:50 a. m.	5	.22	.36	5:18 a. m.	1	.66	1.20	3:05 p. m.	5	.88	.12
8:55 a. m.	5	.23	.12	5:20 a. m.	2	.66	0	3:10 p. m.	5	.89	.12
9:00 a. m.	5	.27	.48	7:33 a. m.	133	.68	T	3:12 p. m.	2	.90	.30
9:15 a. m.	15	.29	.08	7:34 a. m.	1	.71	1.80	3:15 p. m.	3	.90	0
9:30 a. m.	15	.33	.16	7:35 a. m.	1	.76	3.00	3:30 p. m.	15	.91	.04
9:45 a. m.	15	.39	.24	7:36 a. m.	1	.86	6.00	3:45 p. m.	15	.92	.04
10:00 a. m.	15	.44	.20	7:38 a. m.	2	.92	1.80	3:50 p. m.	5	.92	0
10:15 a. m.	15	.46	.08	7:40 a. m.	2	.96	1.20	4:00 p. m.	10	.97	.30
10:30 a. m.	15	.53	.28	7:43 a. m.	3	.97	.20	4:10 p. m.	10	1.05	.48
10:45 a. m.	15	.56	.12	7:44 a. m.	1	1.00	1.80	4:20 p. m.	10	1.11	.36
11:00 a. m.	15	.73	.68	7:45 a. m.	1	1.06	3.60	4:30 p. m.	10	1.19	.48
11:15 a. m.	15	.98	1.00	7:48 a. m.	3	1.19	2.60	4:35 p. m.	5	1.20	.12
11:30 a. m.	15	1.13	.60	7:50 a. m.	2	1.28	2.70	4:40 p. m.	5	1.24	.48
11:45 a. m.	15	1.22	.36	7:52 a. m.	2	1.37	2.70	4:45 p. m.	5	1.27	.36
12:00 m.	15	1.27	.20	7:55 a. m.	3	1.49	2.40	5:00 p. m.	15	1.30	.12
12:15 p. m.	15	1.36	.36	7:58 a. m.	3	1.61	2.40	5:15 p. m.	15	1.35	.20
12:30 p. m.	15	1.44	.32	8:00 a. m.	2	1.65	1.20	5:30 p. m.	15	1.39	.16
12:45 p. m.	15	1.47	.12	8:05 a. m.	5	1.69	.48	5:45 p. m.	15	1.41	.08
12:45 p. m.	230	1.47	0	8:10 a. m.	5	1.73	.48	5:50 p. m.	5	1.43	.24
4:35 p. m.	5	1.48	.12	8:15 a. m.	5	1.77	.48	5:52 p. m.	2	1.48	1.50
4:40 p. m.	5	1.50	.24	12:24 p. m.	209	1.77	0	5:55 p. m.	3	1.49	.20
4:45 p. m.	45	1.50	0	12:27 p. m.	3	1.81	.80	6:00 p. m.	5	1.50	.12
5:45 p. m.	15	1.54	.16	12:30 p. m.	3	1.99	3.60	6:05 p. m.	5	1.51	.12
6:35 p. m.	50	1.54	0	12:32 p. m.	2	2.08	2.70	6:10 p. m.	5	1.53	.24
6:45 p. m.	10	1.58	.24	12:43 p. m.	11	2.08	0	6:15 p. m.	5	1.55	.24
7:00 p. m.	15	1.68	.40	12:44 p. m.	1	2.12	2.40	6:30 p. m.	15	1.60	.20
7:15 p. m.	15	1.74	.24	12:46 p. m.	2	2.24	3.60	6:45 p. m.	15	1.61	.04
7:20 p. m.	5	1.75	.12	12:48 p. m.	2	2.28	1.20	7:00 p. m.	15	1.62	.04
7:25 p. m.	5	1.76	.12	12:50 p. m.	2	2.36	2.40	7:30 p. m.	30	1.64	.04
7:27 p. m.	2	1.80	1.20	12:53 p. m.	3	2.41	1.00	8:00 p. m.	30	1.65	.02
7:30 p. m.	3	1.80	T.	12:55 p. m.	2	2.42	.30	9:35 p. m.	95	1.65	0
7:36 p. m.	6	1.83	.30	1:00 p. m.	5	2.49	.84	9:40 p. m.	5	1.66	.12
7:50 p. m.	14	1.83	0	1:05 p. m.	5	2.54	.60	10:30 p. m.	50	1.66	0
8:00 p. m.	10	1.85	.12	1:10 p. m.	5	2.56	.24	10:35 p. m.	5	1.78	1.44
9:30 p. m.	90	1.85	0	1:20 p. m. ³	10	2.57	.06	10:40 p. m.	5	1.82	.48
9:45 p. m.	15	1.94	.36	STORM OF OCT. 25-27				10:45 p. m.	5	1.83	.12
10:00 p. m.	15	1.95	.04	Oct. 25:				10:50 p. m.	5	1.84	.12
10:10 p. m.	10	1.96	.06	12:14 a. m. ⁵		0.02	0	11:30 p. m.	40	1.84	0
10:42 p. m.	32	1.96	0	12:15 a. m.	1	.03	.60	11:40 p. m.	10	1.85	.06
10:45 p. m.	3	1.97	.20	12:16 a. m.	1	.04	.60	Oct. 26:			
11:15 p. m.	30	1.97	0	12:18 a. m.	2	.11	2.10	1:15 a. m.	95	1.85	0
11:30 p. m.	15	1.99	.08	12:20 a. m.	2	.15	1.20	1:20 a. m.	5	1.86	.12
11:45 p. m.	15	2.03	.16	12:25 a. m.	5	.16	.12	1:22 a. m.	2	1.87	.30
12:00 p. m.	15	2.10	.28	1:15 a. m.	50	.16	0	1:25 a. m.	3	1.88	.20
June 19:				1:30 a. m.	15	.18	.08	2:05 a. m.	40	1.88	0
12:15 a. m.	15	2.23	.52	4:00 a. m.	150	.18	0	2:10 a. m.	5	1.91	.36
12:30 a. m.	15	2.38	.60	4:30 a. m.	30	.19	.02	8:30 a. m.	380	1.91	0
12:45 a. m.	15	2.43	.20	5:00 a. m.	30	.20	.02	8:33 a. m.	3	1.95	.80
1:00 a. m.	15	2.47	.16	5:15 a. m.	15	.21	.04	8:35 a. m.	2	2.07	3.60
2:35 a. m.	95	2.47	0	5:20 a. m.	5	.21	0	8:37 a. m.	2	2.13	1.80
2:40 a. m.	5	2.50	.36	5:25 a. m.	5	.23	.24	8:38 a. m.	1	2.31	10.80
2:45 a. m.	5	2.52	.24	6:30 a. m.	65	.23	0	8:40 a. m.	2	2.45	4.20
3:00 a. m.	15	2.58	.24	6:45 a. m.	15	.26	.12	8:44 a. m.	4	2.60	2.25
3:15 a. m.	15	2.64	.24	7:00 a. m.	15	.28	.08	8:45 a. m.	1	2.61	.60
3:30 a. m.	15	2.70	.24	7:15 a. m.	15	.32	.16	8:50 a. m.	5	2.62	.12
3:45 a. m.	15	2.74	.16	7:30 a. m.	15	.34	.08	9:00 a. m.	10	2.64	.12
4:00 a. m.	15	2.76	.08	7:45 a. m.	15	.35	.04	12:00 m.	180	2.64	0
4:15 a. m.	15	2.79	.12	8:00 a. m.	15	.35	0	1:00 p. m. ³	60	2.65	.01
4:30 a. m.	15	2.80	.04	8:30 a. m.	30	.37	.04	Oct. 27:			
5:30 a. m.	60	2.80	0	9:00 a. m.	30	.39	.04	4:03 a. m. ²		0	0
6:00 a. m.	30	2.81	.02	9:30 a. m.	30	.41	.04	4:05 a. m.	2	.01	.30
6:30 a. m.	30	2.82	.02	9:35 a. m.	5	.41	0	4:10 a. m.	5	.05	.48
6:45 a. m.	15	2.84	.08	9:40 a. m.	5	.43	.24	4:20 a. m.	10	.10	.30
7:20 a. m.	35	2.84	0	9:50 a. m.	10	.46	.18	4:30 a. m.	10	.13	.18
7:30 a. m.	10	2.85	.06	10:00 a. m.	10	.48	.12	4:35 a. m.	5	.14	.12
7:40 a. m.	10	2.88	.18	10:15 a. m.	15	.51	.12	4:38 a. m.	3	.15	.20
7:50 a. m.	10	2.95	.42	12:30 p. m.	135	.51	0	4:40 a. m.	2	.17	.60
8:00 a. m.	10	2.96	.06	12:45 p. m.	15	.52	.04	4:45 a. m.	5	.21	.48
8:10 a. m.	10	2.98	.12	1:00 p. m.	15	.54	.08	4:50 a. m.	5	.29	.96
8:20 a. m.	10	2.99	.06					4:54 a. m.	4	.34	.75
8:30 a. m. ³	10	3.00	.06					4:55 a. m.	1	.38	2.40
								4:58 a. m.	3	.41	.60
								5:00 a. m.	2	.44	.90

¹ For location of rainfall station see fig. 2.² Rain began.³ Rain ended.⁵ No intensity record prior to this time.

TABLE 121.—Rainfall at station 145 for selected storms, 1939—Continued

Date and time	Time interval	Accumulated depth	Intensity	Date and time	Time interval	Accumulated depth	Intensity	Date and time	Time interval	Accumulated depth	Intensity
STORM OF OCT. 25-27—Continued				STORM OF OCT. 25-27—Continued				STORM OF OCT. 25-27—Continued			
Oct. 27—Con.	Min.	In.	In. per hr.	Oct. 27—Con.	Min.	In.	In. per hr.	Oct. 27—Con.	Min.	In.	In. per hr.
5:05 a. m.	5	0.55	1.32	7:55 a. m.	5	0.78	0.36	10:29 a. m.	1	1.17	0.60
5:10 a. m.	5	.61	.72	8:00 a. m.	5	.82	.48	10:30 a. m.	1	1.18	.60
5:20 a. m.	10	.65	.24	8:15 a. m.	15	.82	0	12:30 p. m.	120	1.18	0
5:30 a. m.	10	.67	.12	8:20 a. m.	5	.83	.12	1:00 p. m.	30	1.19	.02
5:40 a. m.	10	.68	.06	8:30 a. m.	10	.88	.30	1:39 p. m.	39	1.19	0
6:15 a. m.	35	.68	0	8:40 a. m.	10	.89	.06	1:40 p. m.	1	1.22	1.80
6:30 a. m.	15	.69	.04	8:50 a. m.	10	.91	.12	1:42 p. m.	2	1.26	1.20
6:45 a. m.	15	.70	.04	9:00 a. m.	10	.94	.18	1:45 p. m.	3	1.27	.20
6:53 a. m.	8	.70	0	9:24 a. m.	24	.94	0	1:50 p. m.	5	1.28	.12
6:55 a. m.	2	.71	.30	9:25 a. m.	1	.95	.60	2:00 p. m.	10	1.30	.12
7:00 a. m.	5	.72	.12	9:30 a. m.	5	.99	.48	3:25 p. m.	85	1.30	0
7:20 a. m.	20	.72	0	9:35 a. m.	5	1.08	1.08	3:30 p. m.	5	1.32	.24
7:30 a. m.	10	.73	.06	9:40 a. m.	5	1.14	.72	3:40 p. m.	10	1.33	.06
7:39 a. m.	9	.73	0	9:50 a. m.	10	1.14	0	3:50 p. m.	10	1.35	.12
7:40 a. m.	1	.74	.60	10:00 a. m.	10	1.15	.06	5:30 p. m.	100	1.35	0
7:45 a. m.	5	.74	0	10:10 a. m.	10	1.16	.06	6:00 p. m.	30	1.36	.02
7:50 a. m.	5	.75	.12	10:28 a. m.	18	1.16	0	6:30 p. m. ³	30	1.37	.02

³ Rain ended.TABLE 122.—Rainfall at station 146¹ for selected storms, 1939

Date and time	Time interval	Accumulated depth	Intensity	Date and time	Time interval	Accumulated depth	Intensity	Date and time	Time interval	Accumulated depth	Intensity
STORM OF FEB. 14-15 [Record missing]				STORM OF JUNE 18-19—Continued				STORM OF JULY 8—Continued			
STORM OF JUNE 18-19				June 18—Con.	Min.	In.	In. per hr.	July 8—Con.	Min.	In.	In. per hr.
June 18:	Min.	In.	In. per hr.	11:40 p. m.	10	2.00	0.06	7:56 a. m.	1	1.42	3.00
7:20 a. m. ²		0	0	11:50 p. m.	10	2.02	.12	7:58 a. m.	2	1.48	1.80
7:30 a. m.	10	.01	.06	12:00 p. m.	10	2.07	.30	8:00 a. m.	2	1.50	.60
7:40 a. m.	10	.01	T	June 19:				8:03 a. m.	3	1.53	.60
7:50 a. m.	10	.02	.06	12:10 a. m.	10	2.11	.24	8:10 a. m.	7	1.61	.69
8:00 a. m.	10	.03	.06	12:20 a. m.	10	2.19	.48	8:14 a. m.	4	1.68	1.05
8:10 a. m.	10	.04	.06	12:30 a. m.	10	2.29	.60	8:17 a. m.	3	1.69	.20
8:20 a. m.	10	.07	.18	12:40 a. m.	10	2.34	.30	12:23 p. m.	246	1.69	0
8:30 a. m.	10	.10	.18	12:50 a. m.	10	2.36	.12	12:25 p. m.	2	1.73	1.20
8:40 a. m.	10	.11	.06	1:00 a. m.	10	2.42	.36	12:28 p. m.	3	1.83	2.00
8:50 a. m.	10	.12	.06	2:40 a. m.	100	2.42	0	12:30 p. m.	2	1.97	4.20
9:00 a. m.	10	.18	.36	2:50 a. m.	10	2.46	.24	12:32 p. m.	2	2.01	1.20
9:10 a. m.	10	.23	.30	3:00 a. m.	10	2.50	.24	12:42 p. m.	10	2.01	0
9:20 a. m.	10	.28	.30	3:10 a. m.	10	2.53	.18	12:45 p. m.	3	2.13	2.40
9:30 a. m.	10	.30	.12	3:20 a. m.	10	2.59	.36	12:46 p. m.	1	2.17	2.40
9:40 a. m.	10	.31	.06	3:30 a. m.	10	2.65	.36	12:48 p. m.	2	2.19	.60
9:50 a. m.	10	.38	.42	3:40 a. m.	10	2.68	.18	12:50 p. m.	2	2.25	1.80
10:00 a. m.	10	.42	.24	3:50 a. m.	10	2.70	.12	12:54 p. m.	4	2.29	.60
10:10 a. m.	10	.44	.12	4:00 a. m.	10	2.72	.12	1:00 p. m.	6	2.37	.80
10:20 a. m.	10	.46	.12	4:10 a. m.	10	2.74	.12	1:04 p. m.	4	2.41	.60
10:30 a. m.	10	.49	.18	4:20 a. m.	10	2.75	.06	1:10 p. m.	6	2.43	.20
10:40 a. m.	10	.51	.12	4:30 a. m.	10	2.76	.06	1:50 p. m.	40	2.45	.03
10:50 a. m.	10	.56	.30	4:40 a. m.	10	2.78	.12	2:00 p. m. ³	10	2.48	.18
11:00 a. m.	10	.61	.30	6:40 a. m.	120	2.78	0	STORM OF OCT. 25-27			
11:10 a. m.	10	.69	.48	6:50 a. m.	10	2.80	.12	Oct. 25:			
11:20 a. m.	10	.93	1.44	7:00 a. m.	10	2.80	T.	12:14 a. m. ²		0	0
11:30 a. m.	10	1.14	1.26	7:10 a. m.	10	2.81	.06	12:17 a. m.	3	.01	.20
11:40 a. m.	10	1.20	.36	7:20 a. m.	10	2.83	.12	12:19 a. m.	2	.10	2.70
11:50 a. m.	10	1.22	.12	7:30 a. m.	10	2.87	.24	12:20 a. m.	1	.12	1.20
12:00 m.	10	1.26	.24	7:40 a. m.	10	2.88	.06	12:21 a. m.	1	.16	2.40
12:10 p. m.	10	1.28	.12	7:50 a. m.	10	2.89	.06	12:25 a. m.	4	.17	.15
12:20 p. m.	10	1.33	.72	8:00 a. m.	10	2.89	T.	12:30 a. m.	5	.17	0
12:30 p. m.	10	1.45	.20	8:10 a. m.	10	2.89	T.	1:00 a. m.	30	.18	.02
12:40 p. m.	10	1.48	.18	8:20 a. m. ³	10	2.90	.06	4:25 a. m.	205	.18	0
2:40 p. m.	120	1.48	0	STORM OF JULY 8				4:30 a. m.	5	.19	.12
2:50 p. m.	10	1.50	.12	July 8:				4:45 a. m.	15	.20	.04
4:50 p. m.	120	1.50	0	5:05 a. m. ²		0	0	5:00 a. m.	15	.21	.04
5:00 p. m.	10	1.52	.12	5:06 a. m.	1	.05	3.00	5:15 a. m.	15	.21	0
6:46 p. m.	106	1.52	0	5:07 a. m.	1	.11	3.60	5:20 a. m.	5	.23	.24
6:50 p. m.	4	1.56	.60	5:09 a. m.	2	.31	6.00	5:22 a. m.	2	.24	.30
7:00 p. m.	10	1.61	.30	5:10 a. m.	1	.38	4.20	6:15 a. m.	53	.24	0
7:10 p. m.	10	1.69	.48	5:13 a. m.	3	.52	2.80	6:30 a. m.	15	.25	.04
7:20 p. m.	10	1.73	.24	5:15 a. m.	2	.62	3.00	6:45 a. m.	15	.27	.08
7:30 p. m.	10	1.76	.18	5:17 a. m.	2	.65	.90	7:00 a. m.	15	.29	.08
7:40 p. m.	10	1.81	.30	7:33 a. m.	136	.65	0	7:15 a. m.	15	.33	.16
8:00 p. m.	20	1.81	T.	7:35 a. m.	2	.71	1.80	7:30 a. m.	15	.35	.08
8:10 p. m.	10	1.82	.06	7:37 a. m.	2	.80	2.70	7:45 a. m.	15	.36	.04
9:40 p. m.	90	1.82	0	7:39 a. m.	2	.86	1.80	8:00 a. m.	15	.36	0
9:50 p. m.	10	1.87	.30	7:43 a. m.	4	.86	0	8:10 a. m.	10	.39	.18
10:00 p. m.	10	1.89	.12	7:44 a. m.	1	.88	1.20	8:20 a. m.	10	.40	.06
10:10 p. m.	10	1.92	.18	7:45 a. m.	1	.94	3.60	9:05 a. m.	45	.40	0
10:20 p. m.	10	1.94	.12	7:47 a. m.	2	1.05	3.30	9:10 a. m.	5	.41	.12
10:50 p. m.	30	1.94	0	7:50 a. m.	3	1.07	.40	9:20 a. m.	10	.42	.06
11:00 p. m.	10	1.96	.12	7:53 a. m.	3	1.24	3.40	9:30 a. m.	10	.43	.06
11:10 p. m.	10	1.97	.06	7:55 a. m.	2	1.37	3.90	9:35 a. m.	5	.43	0
11:20 p. m.	10	1.98	.06								
11:30 p. m.	10	1.99	.06								

¹ For location of rainfall station see fig. 2.² Rain began.³ Rain ended.

TABLE 122.—Rainfall at station 146 for selected storms, 1939—Continued

Date and time	Time interval	Accumulated depth	Intensity	Date and time	Time interval	Accumulated depth	Intensity	Date and time	Time interval	Accumulated depth	Intensity
STORM OF OCT. 25-27—Continued				STORM OF OCT. 25-27—Continued				STORM OF OCT. 25-27—Continued			
Oct. 25—Con.	Min.	In.	In. per hr.	Oct. 25—Con.	Min.	In.	In. per hr.	Oct. 27—Con.	Min.	In.	In. per hr.
9:38 a. m.	3	0.44	0.20	6:15 p. m.	3	1.66	0.20	5:03 a. m.	3	0.58	1.40
9:40 a. m.	2	.45	.30	6:20 p. m.	5	1.67	.12	5:05 a. m.	2	.62	1.20
9:50 a. m.	10	.48	.18	6:25 p. m.	5	1.71	.48	5:06 a. m.	1	.63	.60
10:00 a. m.	10	.50	.12	6:30 p. m.	5	1.72	.12	5:07 a. m.	1	.66	1.80
10:10 a. m.	10	.53	.18	6:45 p. m.	15	1.74	.08	5:10 a. m.	3	.69	.60
10:20 a. m.	10	.54	.06	7:00 p. m.	15	1.75	.04	5:20 a. m.	10	.71	.12
10:30 a. m.	10	.54	0	7:15 p. m.	15	1.76	.04	5:30 a. m.	10	.74	.18
11:00 a. m.	30	.55	.02	7:30 p. m.	15	1.77	.04	6:00 a. m.	30	.75	.02
11:30 a. m.	30	.55	0	9:45 p. m.	135	1.77	0	6:30 a. m.	30	.76	.02
12:00 m.	30	.56	.02	10:00 p. m.	15	1.78	.04	6:52 a. m.	22	.76	0
12:55 p. m.	55	.56	0	10:32 p. m.	32	1.78	0	6:55 a. m.	3	.78	.40
1:00 p. m.	5	.58	.24	10:33 p. m.	1	1.81	1.80	6:58 a. m.	3	.79	.20
1:10 p. m.	10	.60	.12	10:35 p. m.	2	1.84	.90	7:37 a. m.	39	.79	0
1:20 p. m.	10	.61	.06	10:37 p. m.	2	1.89	1.50	7:40 a. m.	3	.80	.20
1:35 p. m.	15	.61	0	10:40 p. m.	3	1.90	.20	7:45 a. m.	5	.81	.12
1:40 p. m.	5	.62	.12	10:45 p. m.	5	1.91	.12	7:50 a. m.	5	.82	.12
1:50 p. m.	10	.63	.06	10:50 p. m.	5	1.92	.12	7:55 a. m.	5	.84	.24
2:00 p. m.	10	.67	.24	10:55 p. m.	5	1.93	.12	8:00 a. m.	5	.86	.24
2:10 p. m.	10	.68	.06	11:40 p. m.	45	1.93	0	8:10 a. m.	10	.86	0
2:20 p. m.	10	.71	.18	11:50 p. m.	10	1.94	.06	8:15 a. m.	5	.87	.12
2:25 p. m.	5	.73	.24	Oct. 26:				8:20 a. m.	5	.88	.12
2:26 p. m.	1	.73	0	12:30 a. m.	40	1.94	0	8:25 a. m.	5	.91	.36
2:27 p. m.	1	.75	1.20	12:45 a. m.	15	1.95	.04	8:30 a. m.	5	.93	.24
2:30 p. m.	3	.77	.40	1:23 a. m.	38	1.95	0	8:40 a. m.	10	.94	.06
2:40 p. m.	10	.85	.48	1:25 a. m.	2	1.96	.30	8:50 a. m.	10	.95	.06
2:50 p. m.	10	.88	.18	2:05 a. m.	40	1.96	0	8:55 a. m.	5	.96	.12
3:00 p. m.	10	.92	.24	2:10 a. m.	5	1.99	.36	8:57 a. m.	2	.99	.90
3:10 p. m.	10	.93	.06	6:00 a. m.	230	1.99	0	9:22 a. m.	25	.99	0
3:12 p. m.	2	.94	.30	7:00 a. m.	60	2.00	.01	9:25 a. m.	3	1.00	.20
3:15 p. m.	3	.96	.40	8:32 a. m.	92	2.00	0	9:30 a. m.	5	1.06	.72
3:20 p. m.	5	.97	.12	8:33 a. m.	1	2.01	.60	9:35 a. m.	5	1.10	.48
3:40 p. m.	20	.97	0	8:35 a. m.	2	2.08	2.10	9:37 a. m.	2	1.17	2.10
3:50 p. m.	10	.99	.12	8:37 a. m.	2	2.17	2.70	9:40 a. m.	3	1.18	.20
4:00 p. m.	10	1.02	.18	8:40 a. m.	3	2.40	4.60	9:50 a. m.	10	1.18	0
4:02 p. m.	2	1.03	.30	8:43 a. m.	3	2.55	3.00	10:00 a. m.	10	1.19	.06
4:05 p. m.	3	1.08	1.00	8:45 a. m.	2	2.58	.90	10:10 a. m.	10	1.20	.06
4:10 p. m.	5	1.13	.60	8:50 a. m.	5	2.60	.24	10:27 a. m.	17	1.20	0
4:15 p. m.	5	1.16	.36	9:00 a. m.	10	2.62	.12	10:30 a. m.	3	1.21	.20
4:20 p. m.	5	1.19	.36	10:00 a. m.	60	2.62	0	11:00 a. m.	30	1.22	.02
4:25 p. m.	5	1.23	.48	11:00 a. m.	60	2.63	.01	1:35 p. m.	155	1.22	0
4:30 p. m.	5	1.27	.48	12:00 m. ³	60	2.64	.01	1:39 p. m.	4	1.23	.15
4:35 p. m.	5	1.29	.24	Oct. 27:				1:40 p. m.	1	1.28	3.00
4:40 p. m.	5	1.31	.24	4:00 a. m. ³		0	0	1:45 p. m.	5	1.31	.36
4:45 p. m.	5	1.35	.48	4:05 a. m.	5	.02	.24	1:50 p. m.	5	1.31	0
4:50 p. m.	5	1.37	.24	4:08 a. m.	3	.05	.60	1:55 p. m.	5	1.32	.12
4:55 p. m.	5	1.38	.12	4:10 a. m.	2	.08	.90	3:24 p. m.	89	1.32	0
5:00 p. m.	5	1.40	.24	4:15 a. m.	5	.10	.24	3:25 p. m.	1	1.33	.60
5:15 p. m.	15	1.45	.20	4:20 a. m.	5	.12	.24	3:30 p. m.	5	1.34	.12
5:30 p. m.	15	1.49	.16	4:25 a. m.	5	.15	.36	4:00 p. m.	30	1.35	.02
5:45 p. m.	15	1.51	.08	4:30 a. m.	5	.16	.12	4:30 p. m.	30	1.36	.02
5:50 p. m.	5	1.52	.12	4:35 a. m.	5	.17	.12	5:07 p. m.	37	1.36	0
5:53 p. m.	3	1.56	.80	4:40 a. m.	5	.20	.36	5:10 p. m.	3	1.37	.20
5:55 p. m.	2	1.60	1.20	4:45 a. m.	5	.26	.72	5:20 p. m.	10	1.37	0
6:00 p. m.	5	1.61	.12	4:46 a. m.	1	.27	.60	5:30 p. m.	10	1.38	.06
6:05 p. m.	5	1.61	0	4:50 a. m.	4	.33	.90	6:57 p. m.	87	1.38	0
6:10 p. m.	5	1.62	.12	4:55 a. m.	5	.43	1.20	7:00 p. m. ³	3	1.40	.40
6:12 p. m.	2	1.65	.90	5:00 a. m.	5	.51	.96				

³ Rain began.³ Rain ended.

TABLE 123.—Location and construction data for observation wells in which ground-water levels are recorded

Well No.	Latitude	Longitude	Mean sea level elevation of measuring point	Topographic location	Surrounding land use	Aspect	Geologic horizon of water table
	° ' "	° ' "	Feet				
2	40 23 55	81 48 55	1,040.74	Slope	Cultivated pasture	North	Putnam Hill limestone.
10	40 22 40	81 49 40	849.73	Bottom	Pasture	Horizontal	Alluvium.
12	40 22 25	81 49 2	1,086.19	Upland	Woods	do	Van Port limestone.
16	40 23 5	81 48 1	1,015.92	Slope	Cultivated	North	Lower Mercer limestone.
21	40 23 37	81 48 10	1,001.88	do	do	Northwest	Upper Mercer limestone.
27	40 24 54	81 47 44	1,155.89	Upland	do	Horizontal	No. 5 coal.

